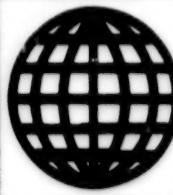


JPRS-TEN-93-007

29 March 1993



FOREIGN  
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INFORMATION  
SERVICE

***JPRS Report***

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# **Environmental Issues**

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# Environmental Issues

JPRS-TEN-93-007

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**Greenpeace Team Reports Environmental Damage  
in Antarctica**

*PY2602195093 Madrid EFE in Spanish 2130 GMT  
25 Feb 93*

[Text] Buenos Aires, 25 Feb (EFE)—The international environmentalist organization Greenpeace today charged that the activities people are undertaking in Antarctica are endangering the environment and the preservation of wildlife in the "white continent."

An eight-person Greenpeace team travelled to Antarctica aboard the Pelagic, a sailing ship that set sail on 31 December 1992 from Ushuaia, Argentina's southernmost city, returning to that city on 12 February.

Among the aggressions against the environment the team detected were waste left on the ice surface, scientific bases abandoned many years ago, and airstrips that do not respect the ecological system.

Argentine scientist Ricardo Roura, a team member, told the press that "the Argentine, Chilean, and British bases, which have been used for a longer period and have more activities, have the oldest facilities—they are 30 to 70 years old—and have poor environmental practices."

The scientist, who has visited Antarctica on several occasions, added that "there are several bases that are more modern and that are generally much smaller and with fewer environmental problems."

The mission arrived at southern Shetland Island, where it inspected scientific bases run by Argentina, China, Korea, England, Brazil, Uruguay, Poland, Ecuador, and Russia.

The Antarctic continent is "protected" by the Protocol of Madrid, which Antarctic Treaty countries signed in 1991 to preserve the region's environment.

Even though those countries signed the protocol, they did not ratify it in their congresses, for which reason it has no legal force for implementation, Roura said.

Argentine photographer Jorge Gutman, another team member, said that "all the countries agreed to implement the protocol even before granting congressional ratification to it. But protocol provisions are not being complied with, despite the fact that they are quite strict."

The other six team members already have returned to their countries, the United States, France, Great Britain, and Brazil.

Greenpeace began its expeditions to Antarctica in the early 1980's. Since that time, the organization has advocated the transformation of Antarctica into a "world park," banning the exploitation of mineral resources, military activities, the dumping of nuclear and toxic waste, and the killing of animals.

### State Council Urges Water, Soil Conservation by Localities

OW2802125893 Beijing XINHUA Domestic Service  
in Chinese 0215 GMT 18 Feb 93

[Text] Beijing, 18 Feb (XINHUA)—The State Council recently issued to all localities a "Circular on Paying More Attention to Water and Soil Conservation," calling on all localities to pay more attention to water and soil conservation, fundamentally improve conditions for agricultural production, and promote economic development. The State Council is urging localities to do a better job in preventing soil erosion in an effort to help poor mountainous regions become well-off sooner, to protect the land, and to improve the environment.

The circular says: Because our country has a large population, its water and soil resources are relatively deficient and the problem of soil erosion has always been quite serious. Currently, some 1.7 million square km of waterlogged land need to be dealt with. The task of improving this land is very arduous. With the constantly increasing population and rapid economic growth, soil erosion and shortage of water and soil resources will become even more serious. For this reason, the people's governments and the departments concerned at all levels must view water and soil conservation from a strategic perspective and regard it as the lifeblood of development of mountainous regions, as the basis for land improvement and river harnessing, as the foundation for economic and social development, and as a basic national policy that we must uphold for a long time. The people's governments and departments concerned must enhance their sense of urgency in controlling soil erosion, list water and soil conservation as an important item on their daily agenda, and accelerate remedial measures for soil erosion.

The circular says: Water and soil conservation departments, particularly those in regions with serious soil erosion, should strengthen the water and soil conservation agencies and seriously do a good job in managing work, in making comprehensive efforts to deal with problems, in supervising the work of lower levels and work in monitoring soil erosion, and in relevant scientific research and education. The agricultural, forestry, energy, and transport departments and large and medium-sized industrial and mining enterprises should actively support water and soil conservation departments in their work, while seriously performing their own duties with respect to control and prevention of soil erosion. It is necessary to establish a reporting system on the water and soil conservation plan. All new construction projects and resource development projects in mountainous regions, hilly regions, and sandstorm regions must be accompanied by a water and soil conservation plan examined and approved by the relevant water and soil conservation department. Planning departments at various levels must strictly check the plan when they examine and approve construction or a

development project. We should establish a sound a system for supervising the prevention of soil erosion.

The circular emphasizes: All localities should increase various forms of investment through various channels and make great efforts in water and soil conservation. In remedying soil erosion, we should display self-reliance and rely mainly on local investment and labor with only moderate state assistance. We should continue the policy of letting investors enjoy the right to use the newly developed land in order to arouse enthusiasm among various quarters for controlling soil erosion. As for the collectives, households, and individuals that contract to reclaim mountain and valley wastelands, hilly wastelands, and beach wastelands, their right to use the reclaimed land should remain unchanged for a long time.

### Government Improves Oceanic Environmental Protection

OW2802193093 Beijing XINHUA in English  
1558 GMT 28 Feb 93

[Text] Beijing, February 28 (XINHUA)—China has improved oceanic environmental protection over the past ten years since the enforcement of China's Oceanic Protection Law.

According to the National Bureau of Oceanography, the enforcement of the Oceanic Protection Law has played a positive role in strengthening the management of oceanic environment, protecting oceanic environment from pollution and promoting the rational development of marine resources.

Over the past ten years, the output value of marine economy has quadrupled in the coastal areas of the country thanks to the well-protected environment in coastal waters.

In order to enforce the Oceanic Protection Law, the State Council has issued a series of rules and regulations on oceanic environmental protection including regulations on environmental protection in offshore oil exploration and development and rules on dumping wastes in the ocean.

All the relevant regions and departments have established a series of systems to monitor oceanic environment, control dumping of wastes and assess effects of coastal construction projects on the environment of coastal waters.

As part of transforming its management mechanism over the past ten years, the national bureau of oceanography has organized an oceanic law enforcement team to monitor the major water areas, waterways, fishing areas and sewage drainages.

As early as 1984, the National Bureau of Oceanography, in cooperation with relevant departments and coastal provinces and cities, established a national oceanic monitoring network to cover a total water area of two million square km.

While strengthening oceanic environmental protection, China has also established 14 marine nature reserves which have proved to be efficient in ecological protection.

### **Shelterbelts Along Yangtze Profit for Environment, Economy**

*OW2802035993 Beijing XINHUA in English  
0329 GMT 28 Feb 93*

[Text] Wuhan, February 28 (XINHUA)—The shelterbelt trees planted in central China's Hubei Province along the upper and middle reaches of the Yangtze river have not only created a good ecological environment but also money for local economies.

It is estimated that the shelterbelts in Hubei Province have recovered about 697,000 hectares of land, over 15 percent of which is in trees, since the giant undertaking began four years ago.

The majority of the 21 counties and towns responsible for afforestation along the Yangtze river are in economically backward mountainous areas.

The province has established 2,462 nurseries for the production of quality tree seedlings and 864 mills for timber and forest products, with an output value of nearly 12 million yuan last year.

### **Minister Details Success of Afforestation Efforts**

*OW0503142893 Beijing XINHUA in English  
1408 GMT 5 Mar 93*

[Text] Beijing, March 5 (XINHUA)—A top forestry official claims that China has planted 33 million hectares of trees during the last four decades—the world's biggest afforestation program.

Speaking at a national forestation committee conference on Wednesday, Gao Dezan, minister of forestry, said the man-made forests have raised the country's tree coverage to 13.63 percent.

South China's Guangdong and neighboring Fujian Provinces became the country's first two provinces to cover all wasteland and suitable hillsides with trees, said the minister.

Gao said China's forestry efforts had redoubled since the National People's Congress (NPC) passed a resolution in December 1981 calling on all citizens to plant three to five trees a year.

The tree-planting resolution made as a result of a suggestion by Deng Xiaoping created Arbor Day which falls on March 12.

Gao said about 500 million people planted 2.4 billion trees in 1992, nearly one eighth of the 16 billion trees planted over the past 11 years.

According to the minister, in recent years, the area covered by economic, fuel and bamboo forests and forests seeded by plane increased yearly by 660,000 ha, 330,000 ha, 50,000 ha and nearly one million ha respectively.

China launched four major shelter belt projects in recent decades.

A forest shelter project started in 1978 in nearly 10 provinces and municipalities in North China, Northeast China and northwest, helped lift the region's tree coverage to 9.1 percent from five percent.

About 13 million hectares were covered with trees planted by local people, involving central and local government investment of 557 million U.S. dollars. The project was designed to increase forested areas in the region by nearly 40 million ha.

The other three projects are the Yangtze forest shelter belt commenced four years ago, a coastal shelter belt and windbreaks to protect farmland in the country's plain areas.

About three million hectares along the Yangtze River have been planted in four years.

The Three Norths project has led to the protection of about 11 million hectares of farmland and nine million hectares of grasslands from high winds. As a result, grain production has increased by between 10 and 30 per cent.

China plans to increase its forest coverage to more than 15 percent by the year 2000.

### **Foreign Investment Welcome in Environment Industry**

*HK0603035093 Beijing CHINA DAILY in English  
6 Mar 93 p 1*

[Report by staff reporter: "Environment Right for Investors"]

[Text] China welcomes all foreign organizations and individuals to invest in this country's environmental protection industry, says Qu Geping, director of the National Environmental Protection Agency.

Qu told the inaugural meeting of the China Association of the Environmental Protection Industry in Beijing yesterday that the country had seen great advancement in this area.

More than 150 technical products had won State and ministerial medals. Some had even been exported to more than 30 countries.

But Qu added that the products needed to be improved in both variety and quantity.

He said the industry should be further expanded to serve the global environmental protection cause.

**Sponsored by the National Environmental Protection Agency, the association will organize scientific research and academic exchanges across China.**

**It will also assist the government in managing and developing environmental protection enterprises.**

**So far, over 130 social organizations and units have been admitted into the association.**

**Vice-Premier Zhu Rongji and the president of the State Council's Environmental Protection Committee, State Councillor Song Jian, sent their congratulations to the conference. They encouraged the association to contribute to the national environmental cause and to expand international markets.**

#### **Efforts To Protect Tibet Environment Detailed**

*OW0603143793 Beijing XINHUA in English  
1405 GMT 6 Mar 93*

**[Text] Lhasa, March 6 (XINHUA)—Southwest China's Tibet Autonomous Region has been aware of the need for environmental protection since its peaceful liberation in 1951.**

**While developing the local economy, the region has attached great importance to avoiding damage and pollution to the environment, according to local officials.**

**Documents supplied by the regional Commission on Environmental Protection show that the air and water resources in Tibet are fundamentally unpolluted. No radioactive pollution and acid rain has been detected.**

**Tibet is among the world's few areas that have a very good natural ecological environment, the officials said.**

**Covering 1.2 million square km, Tibet is one of the largest autonomous ethnic regions in the country. In the**

**region Tibetans make up 94.6 percent of the total population of 2.2 million, according to officials.**

**To protect the environment from pollution brought about by a fast developing economy, the regional people's congress Standing Committee and government have issued a series of local laws protecting the forests, grasslands, water resources, animals and plants and imposing strict conditions on mining.**

**In the early 80s, Tibet set up its first environmental supervising station containing some of the most advanced equipment and instruments.**

**Now all the five prefectures in Tibet have established an environmental protection bureau while hundreds of environmental specialists are working around the region.**

**Local environmental protection departments have adhered to the implementation of environmental evaluation before a project is started.**

**Environmental protection facilities must be built along with the building or rebuilding of a project, according to the officials.**

**In its energy industry, Tibet has tried to keep environmental pollution to the minimum by making better use of its redundant terrestrial heat, solar energy and winds.**

**Tibet's efforts have resulted in a sound ecological environment in the region, the officials said.**

**According to official figures, Tibet currently has 6.32 million hectares of forests with timber reserves of more than 1.4 billion square meters, ranking second in the country.**

**The good ecological environment has also benefited local farm production and husbandry which has seen bumper harvests for several years running.**

**In the meantime, the officials said, Tibet has 12 nature reserves covering 325,000 square km to protect the environment and endangered animals and plants.**

## JAPAN

### Toyota To End CFC Use in Car Air Conditioners by Year-End

OW2602110993 Tokyo KYODO in English 1036 GMT  
26 Feb 93

[Text] Nagoya, Feb. 26 (KYODO)—Toyota Motor Corp. said Friday [26 February] it will totally abolish the use of ozone-depleting chemicals in automobile air conditioners by the end of this year, a year earlier than scheduled.

The company said the decision is part of a new action program for environmental protection that calls for the development of environment-friendly vehicles powered by alternate fuel, company officials said.

The Nagoya-based company earlier submitted to the Ministry of International Trade and Industry details of its program calling for an end to the use of harmful chlorofluorocarbons (CFCs) in its automobiles by the end of 1994.

Toyota has already switched over to substitute refrigerating agents for air conditioners in some of its car models, company officials said.

They said the company will promote the development of vehicles with low fuel consumption and low exhaust emissions and enhance the use of recyclable components for vehicles.

### Citizen Groups Object to Free Pesticides for Cambodia

OW2702141893 Tokyo KYODO in English 1334 GMT  
27 Feb 93

[Text] Tokyo, Feb. 27 (KYODO)—Japan is supplying pesticides to Cambodia that U.N. food specialists say could threaten rice crops by increasing the risk of insect plagues, citizen watchdog groups told a symposium Saturday [27 February].

Hirono Azuma, administrator of the Japan International Volunteer Center's Cambodia Office, said she feared the 35 tons of agrochemicals that Japan is supplying as aid could undermine efforts by the Food and Agricultural Organization (FAO) and other groups to promote environmentally-sound agricultural practices in the rebuilding of Cambodia.

Peter Kenmore of the FAO's Integrated Pest Control Program strongly advised against free delivery of pesticides, which he said "must be regarded as a threat to Cambodian rice production," according to an FAO memo made available to Azuma.

Kenmore said the organization's experiences in neighboring Asian countries showed that rice harvests actually decreased when pesticides were used that killed the natural enemies of the brown planthopper pest.

"Currently levels of insect pests and diseases in Cambodia are hardly significant, but will become more serious when pesticide use increases," the memo said.

In a separate report, the International Rice Research Institute wrote that "disastrous consequences (of increased use of pesticides) may be expected in terms of abnormal pest outbreaks, farmers' health, and food contamination."

The two groups have advised Cambodian agriculture authorities to introduce integrated pest management (IPM) techniques, which aim at making maximum use of natural predators, and minimum use of pesticides.

Foreign Ministry Official Masaya Fujiwara told the symposium the pesticides are necessary because increasing rice production is urgent. He said it would take too long to wait for FAO to introduce environmentally friendly practices.

"If in the future IPM is established, the government is prepared to cooperate," said Fujiwara, deputy director of the Foreign Ministry's Grant Aid Division.

Fujiwara said the pesticides are being supplied in response to a request from Cambodian authorities. He said Japan is training Cambodians on safe handling of the toxic chemicals.

The first delivery has already arrived in Cambodia, he said.

"In this case the pesticide is not so much, only 35 tons," he said, responding to concerns expressed by some experts that farmers may get hooked on the chemicals, making it more difficult to introduce natural techniques later.

The pesticides meet Japanese standards, and users will be instructed not to use them during rainy season, when they may run off into rivers and pose a hazard to wildlife, Fujiwara said.

Diazinon, one of the pesticides being provided, is banned in Indonesia. In the United States it is under special review for its effects on wildlife, and has been banned for golf course because it was identified as deadly to 23 bird species.

The symposium, sponsored by the Japan International Volunteer Center and a coalition of environmental and aid watchdog groups, called for a freeze on distributing the agrochemicals until Cambodian authorities decide on a more comprehensive pesticide strategy.

Ecological pest control techniques were developed about 30 years ago, but have been promoted by some aid organizations only in recent years.

Japan has helped support a successful integrated pest management program in Indonesia.

### Tokyo Asked To Respond To Proposed Marine Dumping Rules

OW0803124593 Tokyo KYODO in English 1046 GMT  
8 Mar 93

[Text] Tokyo, March 8 (KYODO)—The secretariat of an international convention limiting marine dumping of waste has asked Japan to respond by April 1 to suggested new rules totally banning industrial waste disposal at sea, environment agency sources said Monday.

The proposal for 13 amendments to the convention would place severe restrictions on Japanese industry which is the largest marine dumper of industrial waste in the world, the sources said.

The amendments, which are a response to requests from North European countries experiencing heavy pollution in the Atlantic Ocean and Baltic Sea, would necessitate a new strategy for the domestic disposal of industrial waste and could lead to a restructuring of the production cycle.

Japan ratified the convention on the prevention of marine pollution by dumping of waste and other matter, also known as the London convention, in 1980 after the convention came into effect in 1975. In September last year, the convention had 70 signatory countries.

Signatory countries in 1990 adopted a resolution agreeing to an in-principle ban on marine dumping by 1995.

But in its present form, it amounts to little more than an unenforceable gentleman's agreement.

The London-based secretariat's proposed amendments would place a total ban on the disposal of industrial and radioactive waste at sea.

They would also oblige signatory countries to refrain from exporting their waste to nonsignatory countries for ultimate disposal at sea and would ban the burning of waste at sea.

The amendments also represent a strengthening of provisions covering the reporting of measures taken by signatory countries and their compliance with the terms of the convention.

The amendments would also cover inland bodies of water currently excluded from the convention.

After it assesses responses from signatory countries, the secretariat proposes to hold a special preparatory meeting of the countries in July and present a final version of the amendments to a full meeting in November.

Current legislation in Japan permits the disposal of certain wastes including waste acids, alkalines and sludge from aluminum refining, if the wastes do not contain harmful organic substances such as polychlorinated biphenyls (PCB).

The Japanese industry dumps about 4.5 million tons of industrial waste every year in the Pacific Ocean and the Japan Sea at depths of more than 1,000 meters in specified zones more than 90 kilometers from the shore.

### LDP Panel Approves Environment Bill With Tax Potential

OW0903022193 Tokyo KYODO in English 0148 GMT  
9 Mar 93

[Text] Tokyo, March 9 (KYODO)—An environmental panel of the ruling Liberal Democratic Party (LDP) on Tuesday [9 March] approved the final draft of an environmental bill that could lead to the introduction of taxes aimed at protecting the environment, party officials said.

The panel approved the draft of the proposed basic environment law, which aims at compatibility of economic development and environmental preservation and at establishing a "sustainable society."

The government will submit the draft to the current Diet session after a cabinet meeting officially approves it Friday, the officials said.

In its general provisions, the draft points to a growing sense of crisis in connection with the environmental situation across the country.

There is an increasing fear that the world's environment, which is crucial to the survival of the human race, could be destroyed by the negative effects of human activities, the draft warns.

As ways to achieve the compatibility of economic development and preserving the environment, the draft cited the introduction of economic measures, promotion of assessments of ecological impact for proposed projects, and promotion of international cooperation on environmental matters.

On economic measures to protect the national environment, such as taxes, the final draft was somewhat watered down from an earlier draft, due reportedly to stiff opposition from the Ministry of International Trade and Industry.

Yet it still vows to gain public understanding of and cooperation with the economic measures and simultaneously to study the potential economic impact and the possibility of international cooperation if the measures are actually taken.

The measures could mean introducing charges or taxes on environmentally damaging products or activities, as well as deposits on returnable containers.

Some northern European nations have already introduced environmental taxes, and the Organization for Economic Cooperation and Development plans to recommend the introduction of such taxes to its member states.

Concerning environmental assessments, which are currently made at the direction of the cabinet, the draft notes the need for "appropriate steps" to be taken to promote such efforts.

The Environment Agency has no intention of incorporating these assessments into legislation at this stage, but this could well depend on Diet deliberations on the bill, agency sources said.

Nongovernmental organizations, however, are dissatisfied with the draft. They maintain that legislating for environmental assessments is essential to prevent pollution and preserve the environment.

The draft also seeks to protect the environment by boosting public awareness in this age of mass consumerism and by asking citizens to pay more heed to how they dispose of used or unwanted products.

It also calls for more environmental assistance to developing countries and for Japanese corporations doing business abroad to take the environment of their host countries into consideration.

#### **Business Circles 'Calmly' Accept Environmental Law**

OW0903024993 Tokyo KYODO in English 0150 GMT  
9 Mar 93

[Text] Tokyo, March 9 (KYODO)—Japan's business community calmly accepted a proposed environmental bill Tuesday [9 March], believing it will not immediately lead to an environment-preservation tax.

"Specific policies have yet to be worked out. The basic law just stipulated the importance of environment and is conceptual, so we don't think we should oppose it," said a ranking official of the nation's top business lobby, the Federation of Economic Organizations (Keidanren).

The proposed basic environment law, which was approved earlier Tuesday at an environment panel of the ruling Liberal Democratic Party (LDP), was thought to cause considerable harm to business circles by forcefully limiting their activities and introducing a new tax for ecology conservation.

But due to vociferous opposition from the Ministry of International Trade and Industry, the panel has decided to require various preconditions for the introduction of taxes and restrictions.

An official of Tokyo Electric Power Co. said, "It is premature to think the basic law will immediately lead to an environmental tax."

In addition, few carmakers seem to be critical of the basic law, the industry sources said.

#### **EAST ASIA**

#### **SOUTH KOREA**

##### **Ministry Foresees 'Environmentally-Friendly' Fuel by 1995**

SK2702040293 Seoul THE KOREA TIMES in English  
27 Feb 93 p 3

[Text] Almost of the entire country will be using environmentally-friendly fuels by 1995 with an expansion in their mandatory use, the Environment Ministry said yesterday.

The use of clean energy, coupled with the ban on the use of leaded gasoline and diesel fuel with high sulfur content by automobiles, is forecast to considerably improve the quality of air.

According to ministry officials, the metropolitan district and areas in the vicinity have already begun to use low-sulfur Bunker C oil and liquefied natural gas (LNG) and the latest guideline calls for virtually the entire country to convert their sources of energy.

At present, Seoul, Inchon and 18 smaller administrative districts in Kyonggi-do are subject to the use of compulsory use of clean energy and most conversion work has been completed.

The officials explained that the guideline makes it necessary for suppliers to distribute Bunker C oil that has a sulfur content of just 1.0 percent, down from the previous 1.6 percent.

Under the latest measure, suppliers in Pusan and Taegu will have to reduce the sulfur content in Bunker C oil to the prescribed level by July next year, they said.

The officials said the mandatory use of LNG, now applied to 17 areas including Seoul and the suburban city of Kwachon, will also be expanded to cover most cities by September 1995.

The measure on the compulsory use of LNG will only apply to apartments with a total floor space of 25 pyong (one pyong is approximately 3.3 square meters) or building equipped with boilers with capacities of more than 0.5 tons.

The environment officials elaborated that construction work for converting the supply of energy to LNG will be kicked off to be completed before the end of 1995 so that large cities like Pusan, Kwangju and Ulsan can also conform to the new regulations.

"There is the dispute over forcing residents and businesses to bear the cost of the conversion work put most of those that have been affected have shown a positive attitude thus far," one official observed.

Burdened by the worsening air pollution here, placed as the second worst in the world by the World Health Organization (WHO), the ministry initiated the ambitious plan to convert all energy sources to those that are environmentally-friendly in 1991.

City administration of affected areas issued directives for conversion work to be completed by set dates and only few have been holding out, mostly citing financial difficulties.

Although there are currently no legal means of enforcing the regulation, the government is optimistic that the plan will be well- accepted by the general public.

### ROK Plans To Verify Russian Nuclear Waste Dumping Report

*SK0203092393 Seoul TONG-A ILBO in Korean  
2 Mar 93 p 1*

[Text] In connection with the British television broadcast report that the Russian Navy has been dumping nuclear waste in the East Sea, the Ministry of Foreign Affairs is considering measures, instructing the ROK embassy in Russia to verify the truth of the report.

A relevant Foreign Ministry official said: It is highly probable that the nuclear wastes were dumped in the East Sea because the Russian Government may have had difficulty in exercising its control over its Navy's dumping of nuclear waste materials. If the practice of dumping is found to be true, we will call upon the Russian Government to take a strong measure against it.

## MALAYSIA

### Nation's Environment Progress Assessed

*BK2502155293 Kuala Lumpur NEW STRAITS TIMES  
in English 24 Feb 93 p 12*

[Editorial: "The Message Is Green"]

[Text] In some ways, the environment is nature's rations to sustain mankind. Indulge too much and too fast and man runs out of supplies. His one hope is in the replenishment of his reserves. Whether through a direct or indirect chain, every lifeform is linked in some way. Thus the destruction of some lifeform or the depletion of their support systems might not directly or immediately affect man, but it will eventually come to bear on human life or on the quality of life. Thus alongside the stress on good moral values to keep intact the moral fibre of society, vocational and technical education to serve the future the importance of environmental education and the conservation or renewal of our environment has also to be emphasised. Environmental programmes launched today will not only improve the quality of our lives. Our future existence depends on it.

It is encouraging that in recent years environmental awareness has garnered governmental and non-governmental support. The Finance Minister put it succinctly when he said that if we want the benefit of development to extend beyond the present generation, we must begin to tackle the problem of pollution and environmental degradation. The deterioration of the

environment has its costs which will emerge sooner or later and thus cannot be ignored.

The severity of environmental problems and its threats to social and economic development has to be acknowledged. We have been responsible for some rather far-reaching programmes and projects which should place Malaysia in good stead in terms of environmental protection and preservation. The use of lead-free petrol and the recommended use of catalytic converters should help reduce the damage from one of the largest sources of pollution—vehicles. The gazetting of over 30 islands in Malaysia as marine parks is one positive step towards the preservation of our aqua-life. The recycling campaign has directed greater attention towards the benefits of using recyclable products and reducing the need to cut down more trees or deplete our forests.

Some RM [Ringgit Malaysia] 140 million has been earmarked for four ministries in this year's budget to finance projects to control pollution and conserve the environment. Children are being taught the values of being good and responsible consumers and people are being sent for training in disciplines like environmental management and eco-economics. These are new disciplines which are emerging in response to the issues and challenges which will confront the country in the 21st century, which can only be solved or tackled if we start looking at them now.

More needs to be done because we cannot deny that our rivers are being polluted by factory sludges; that in certain parts of the Klang Valley the lead content is beyond permissible levels; that widespread illegal logging has caused serious damage; that as a developing country we have to have more land for expansion. There persists among some the perception that environmental concern is a privilege of developed countries but just as spending on future income is a foolish way to live, borrowing from the future to lay the groundwork for today is equally fatuous because there might be nothing left for tomorrow.

Programmes such as re-afforestation and industrial co-operation in environmental protection have to be adopted. Industries need to keep in touch with control technology for in doing so, they will also keep in touch with the future.

### Government Agrees To Ratify Montreal Protocol Amendments

*BK2602145993 Kuala Lumpur NEW STRAITS TIMES  
in English 25 Feb 93 p 1*

[By Pang Hin Yue]

[Text] Petaling Jaya, Wednesday—Malaysia has agreed to ratify the amendments to the Montreal Protocol to ensure continued international trade in chlorofluorocarbon (CFC) related products.

Science, Technology and Environment Minister Datuk Law Hieng Ding said the decision was made at today's Cabinet meeting.

He said under Article 4 of the Montreal Protocol, parties to it were banned from trading with those which had not ratified amendments made to the Protocol in Copenhagen last November and in London in 1990.

This ruling took effect from the beginning of this year. However member countries have up to August 10 this year to ratify the amendments.

"If they fail to do so, they will be banned from trading with members to the protocol who had ratified it.

"In view of this, we have no choice but to follow suit. Otherwise our trade on CFC-related products will be seriously affected as we import CFC-related products substantially from developed countries for our refrigeration and air-conditioning industries," he told the Press after witnessing the signing agreement of a joint-initiative on elimination of the usage of ozone depleting substances [ODS] in Malaysia.

The agreement is between major semiconductor producer Motorola (M) [Malaysia] Sdn Bhd [Company Limited], the World Bank, the United States Environmental Protection Agency (EPA), Japan Electrical Manufacturers' Association (JEMA) and Japanese Ministry of International Trade and Industry.

Law said among the amendments to the Montreal Protocol were the complete phasing out of CFCs by 1996.

He said, however, Malaysia had objected to it as it wanted it to be phased out only in 2000.

"With the provisions in Article (5) of the protocol, we will be calling for a review on it in 1995, he said.

On the fund provided for developing countries under the Montreal Protocol to help in phasing out the use of ODS, he said Malaysia would be getting US\$1.6 million (RM4 million) [Ringgit Malaysia] out of a total of US\$113.34 million this year.

He added that developing countries that consumed less than 0.3kg of ODS per capita per year as defined in Article (5) of the protocol were allowed to use CFC-113 solvents until 2010 and for methyl chloroform solvents until 2015.

#### **Commentary Welcomes Austrian Revocation of Eco-Labelling Law**

*BK0603140493 Kuala Lumpur Voice of Malaysia in English 0800 GMT 6 Mar 93*

[Station commentary]

[Text] A welcome news this week came with the reported announcement by the Austrian Government that it intends to withdraw the eco-labelling law which was introduced last year and which offended all countries in

the tropical region. The ruling compels all exporters of tropical timber products to display the label "made from tropical timber." Now the Austrian Government has decided to revoke the law which it says it does not intend a (similar) approach.

It is yet to know the nature of whatever their legislation is going to pass [as heard], but it is satisfying to hear that Austrian Government is sensitive to protests from tropical timber producing countries over the existing law. The decision to revoke the ruling on eco-labelling was apparently taken after last month's visit to Indonesia by Austrian parliamentarians.

Indonesia has the most tropical timber after Brazil, and called for the halt in its trade with Austria if the present law prevails. Exports of timber constitute a major part of Indonesia's foreign exchange earnings. It is the same case with Malaysia as well as other countries who are fellow members of the International Tropical Timber Organization, ITTO.

Malaysia, like Indonesia, has adopted trade legislation in its forestry projects in order to manage sustainable development into a strict logging to a level that will cost no damage to the environment. The laws are being strictly enforced despite the heavy loss in revenue from the timber industry.

The Austrian Government was obviously cautious of its so-called environmental activists to enact the law on eco-labelling. Various non-governmental organizations or NGOs are mainly concerned about the antitropical timber campaigns purely for their own vested interest. The campaigns went to the extent of (?assailing) them, accusing tropical timber producing countries of no sustainable forest development. How much had [words indistinct] discredited our forest management policy before making their own judgment and forcing their government to enforce the eco-labelling rule. It was for this reason that Malaysia and Indonesia strongly opposed the discriminatory law, even warning Austria of retaliatory action if it was not revoked.

Malaysia values its trade relations with Austria [words indistinct] nations. Bilateral trade cooperation has been enhanced between the two countries over the past five years. However, there was much resentment among the business people, especially those in the timber industry when the eco-labelling law was introduced.

The Austrian Government has been wise in realizing that it had made a hasty decision and that eco-labelling is not the right approach. The proposal to revoke law is waiting to be passed by the ruling Austrian Government, with more than a two-third majority in parliament.

The future looks bright for the enhancement of bilateral trade and economic ties between Austria and Malaysia.

## TAIWAN

**Official Speaks Out Against Wildlife Trade Sanctions**

OW2602094793 Taipei CNA in English 0754 GMT 26 Feb 93

[Text] Taipei, Feb. 26 (CNA)—A ranking official Thursday called on world conservationists not to mix up trade affairs with wildlife conservation.

Sun Ming-hsien, chairman of the Council of Agriculture (COA), made the remarks after learning that four animal rights and environmental protection groups are launching an international campaign to boycott Taiwan products for an end to the nation's trade in wildlife products.

Sun said trade sanctions against Taiwan will not only affect Taiwan industries and businesses, but will also adversely affect Taiwan's trade partners around the world.

Taiwan was accused by the Animal Welfare Institute, the Earth Island Institute, the Environmental Investigation Agency and the Humane Society of "widespread use of tiger and rhino body parts in traditional Chinese medicine."

COA Vice Chairman Lin Hsiang-neng said despite the fact that the Republic of China (ROC) is not a member of the convention on international trade in endangered species (CITES), the government has consistently worked toward wildlife protection based on the CITES principles and spirit.

Since the nation enacted a wildlife protection law in June, 1989, violators have been legally convicted in 138 wildlife harassment cases and have received due penalties, Lin said.

Lin said it is unfair to single out Taiwan as an offender while other Asian nations, especially Chinese-speaking nations, also trade in endangered animals.

Lin said promotion of wildlife protection should be conducted in a peaceful and impartial manner. Prejudice and partiality will only backfire on a nation which is seriously implementing wildlife protection policies, as is the Republic of China, he added.

## THAILAND

**Chao Phya River Pollution Detailed**

s93WN0299A Bangkok THE SUNDAY POST in English 7 Feb 93 p 24

[Text] Every now and then, pollution in the Chao Phya River becomes a topic of discussion in seminars and debates organised by government authorities or other concerned parties. After each meeting, measures or plans

of action are proposed. But like other projects of similar magnitude, little or no action is taken to translate these proposals into reality.

In the past five years, foreign experts, such as those who worked on a project to clean up Thomes River, had been invited to share their experiences and views with Thai officials and academics. Study trips had also been organised for Thai officials to gain first hand information on clean-up operations in many foreign countries.

However, the House Committee on the Environment and Health, after its visit to the river last November, reported little progress in controlling the pollution problem.

The official report once again said pollution and low level of oxygen in water were making the river unfit for aquatic animals.

Even worse, the polluted water is reaching further up north.

The issue of polluted water in Chao Phya River, particularly at its lower stretch, first attracted attention more than 10 years ago.

Each year, since then, the dissolved oxygen (DO) level or oxygen content in the water has been reported to be decreasing. Around the Klong Toey port, the DO level dropped to zero while along the upper and central stretches of the 380 kilometre-long river, it has been below two to six milligrams per litre (clean water contains at least seven milligrams of oxygen per litre).

However, the Biochemical Oxygen Demand (BOD) load, the rate at which the process of decay consumes oxygen, from both factories and communities, rose steadily.

The coliform bacteria (caused by human wastes) count in the Chao Phya River reached 1,362,500 MPN (Most Probable Number) per 100 millilitres at the entrance of Klong Phra Khanong against the standard 50,000 MPN per 100 millilitres.

An official of the Pollution Control Department of the Science, Technology and Environment Ministry said the pollution problem was expected to worsen this year following a water shortage caused by a severe drought. In past years, water run-offs from the north helped dilute and push polluted water in the river on to the sea.

So, what has happened to all the grand projects proposed to save the Chao Phya River?

An adviser to the House Committee on the Environment and Health, Dr Dhira Phantumvanich of the Thailand Development Research Institute (TDRI), studied the river water for years and warned the public on the severe pollution problem.

He expressed frustration over the government's slowness to implement anti-pollution projects.

"So far, no large-scale projects such as the wastewater treatment facilities have started operating," he said.

The most frustrating thing, he complains, is that no definite time frame has been set for these projects.

"I think it is very important to have some sort of time frame to implement these plans. To be more efficient, the government should set goals and specify how many years it will take to clean up the water in Chao Phya at each stage."

He added that the time factor was important to speed up the clean-up process.

However, Changthong Opasri, chief of sewerage management system of the Bangkok Metropolitan Administration (BMA), said there was no time frame as such for the clean-up efforts.

"But each scheme will have its own schedule. We have to admit that work has not been carried out according to schedule at various stages," he said.

All the BMA wastewater treatment plans are presently in the bidding stage. These include:

- The 800-million-baht Rattanakosin project at Ban Pan Thom with a capacity to treat 40,000 cubic metres of wastewater a day. Construction is expected to begin by the end of this year and the plant may be ready in two years.
- The construction of the Si Phya treatment plant will begin some time around June. The plant, which is expected to be ready within two years, will be able to treat 30,000 cubic metres of wastewater a day. Mr. Changthong, however, said in the beginning their target would be only 10,000 cubic metres a day.
- The Yannawa plant is scheduled for construction in mid-1994.

"This is a large-scale project with the capacity to treat 190,000 cubic metres of wastewater a day. The design has been completed, and the project is now awaiting a 5,000 million baht budget from the government," Mr. Changthong said.

• A 7,500-million-baht wastewater treatment plant for eight inner districts will be able to treat as much as 370,000 cubic metres a day. The project is in the bidding stage. Construction is likely to start at the end of this year. It will take three years to complete.

"Once the construction of the Si Phya, Rattanakosin projects, and the one for the eight inner districts is completed within the next two or three years, at least 25 to 30 per cent of the wastewater released from communities in Bangkok will be treated," Mr. Changthong said.

"When the Yannawa project is ready, we will be able to treat at least 50 per cent of the total wastewater."

He pointed out that by that time, pollution situation in Chao Phya would improve.

In the meantime, projects covering the remaining areas in the nearby suburbs and provinces, particularly Thonburi, will be launched," he said.

In addition, studies on the construction of wastewater treatment plants in Nong Khaem district and Rat Burana districts are underway.

The BMA, in the meantime, is considering a set of regulations to impose fees on water users based on the "polluter pays" principle, said Mr. Changthong.

He said the fees would help decrease expenses in running the water treatment plants.

"The regulations will be ready within the next two years—when most of the large-scale projects start functioning," he said.

The BMA has also been running a number of small-scale wastewater treatment facilities, previously operated by the National Housing Authority, in Huai Khwang, Klong Chan, Tung Song Hong and Ram-intra.

Nisakorn Kosirat, chief of water quality section of the Pollution Control Department, admitted that implementation of various schemes had been very slow.

She, however, blamed the concerned agencies for the delay.

"I think it is all to do with the way various concerned agencies carried out their tasks."

She added that an attempt to set up a central body to coordinate work concerning Chao Phya River also failed.

"Even though we agreed on a proposal to set up a new body several years ago, it has not been easy to form such a panel," she said.

"That is because it involves various laws and regulations as well as government agencies. But all 11 agencies have agreed instead to be more cooperative with each other in dealing with the problem," she explained.

During Prime Minister Anand Panyarachun's first term two years ago, his government agreed to set up a central authority to coordinate clean-up efforts, proposed by the National Economic and Social Development Board.

However, efforts by private groups to promote awareness among the public are underway.

Magic Eyes campaign creator Khunying Chodchoy Sophonpanich insisted that the Chao Phya River looked "physically better" since they began a campaign to promote public awareness on pollution.

She said the volume of trash directly dumped into the river, either from communities located along the river or from the markets, had also decreased.

"We believe that our campaign to help clean the river has been successful in boosting public awareness. The

BMA, on its part, has been picking up garbage in the rivers and klongs as well as from houses along the river," she said.

However, the water quality continued to deteriorate because a large volume of untreated wastewater from communities, factories and hospitals was still being discharged into the water, she pointed out.

"To us, the Chao Phya is a symbol of rivers throughout the country. We hope that our campaign will create a love for other rivers and water resources and encourage others to introduce such campaigns in their localities," she added.

She said that the public was aware of the fact that the Chao Phya had been severely polluted, and that it was ready to help improve the situation.

"Unfortunately, the government has few facilities or programmes to support these private efforts," said Khunying Chodchoy.

Under such circumstances, she added that the effectiveness of these campaigns might fade.

But she said she would continue her campaign in cooperation with the Pollution Control Department which has recently been allocated some 18 million baht to launch a campaign of its own.

Water quality chief Nisakorn said that the campaign would focus on communities along the river—from Nakhon Sawan province down to Samut Prakarn province.

The department is also taking steps to identify sources of pollution such as factories, communities, farms or hospitals along the river.

"This will be very important, especially when the water in a particular area of the river becomes suddenly polluted," Ms. Nisakorn said. "The possible source can be identified and, if necessary, legal action can be taken against the polluters."

#### NSC Chief Denies Violations of Cambodian Logging Ban

*BK0503023193 Bangkok BANGKOK POST in English 5 Mar 93 p 3*

[Text] THAILAND has complied with the resolutions of the Cambodian Supreme National Council (SNC) banning the export of that country's resources, particularly logs and arms, according to NSC secretary-general Charan Kunlawanit yesterday.

The National Security Council [NSC] chief yesterday met with representatives of the Interior and Commerce ministries, the Customs Department and Police Immigration Division and the governors of seven border provinces to discuss the effect of the export bans.

"Concerning the prohibition of commercial gem mining, we have to let Thai businessmen know about it," he said. Gen Charan said the use of machines and excavators to prospect for gems was prohibited because they could destroy the environment.

The SNC has agreed to allow the export of processed timber by quotas but it has not yet worked out the figures, he said.

"We are waiting to see the figures."

Gen Charan said he wanted Thai businessmen to be aware of the latest moves so they can coordinate with authorities in Cambodia. Thailand has asked the SNC for a six-month moratorium so Thai logging companies with concessions in Cambodia could bring their logs out. The SNC has yet to reply.

Thailand closed its border passes to the transport of logs from Cambodia on January 1 in compliance with a UN resolution imposing economic sanctions on the Khmer Rouge. About 27 logging companies last month claimed they had suffered damage amounting to over 14,800 million baht because of the ban.

They told the Interior Ministry that 1,243 vehicles including tractors and graders and 2,700 workers had been left inside Cambodia. About four million cubic metres of logs still remain to be brought across the border. They also said they had spent a combined 6,075 million baht on logging operations.

Deputy Permanent Secretary for the Interior Chaiwat Hutacharoen said all the Cambodian factions except the Khmer People's National Liberation Front of Son Sann were willing to allow the temporary reopening of passes to allow the remaining logs to be brought into Thailand. He also said the ministry would discuss a report that Thailand was the biggest violator of the log export ban with the NSC.

#### Pak Mun Dam Project Highlights 'Communications Gap'

*BK0903013793 Bangkok BANGKOK POST in English 9 Mar 93 p 4*

[Editorial: "Pak Mun Debacle Due to Communications Gap"]

[Text] The alleged use of force by the police to break up the non-violent protest against the Pak Mun dam in Ubon Ratchathani Province brought back bitter memories of the national tragedy last May when brute force was unleashed by the state to quell prodemocracy demonstrations. There is one major difference, however, between these two incidents—no one was killed this time, although several protesters and dam supporters were injured, including women and children.

The forced dispersal of the dam protesters, though later denied by the Police Department, has drawn heavy

criticism as well as condemnation from non-governmental organisations and student activists. Many of them openly admitted to feeling betrayed by a government which they had expected to be more responsive to the voices of the people. Though their emotional outbursts are understandable, it would be unfair to put this government in the same category as that of a former prime minister who apparently does not feel any sense of remorse for the killing of innocent people last May. At least, Prime Minister Chuan Likphai is not the trigger-happy type of man who believes that a problem can be solved by the use of violence.

Apparently, a big communications gap still exists between the Government and the dam protesters. It is a gap which was probably caused by misinformation or misinterpretation of information that led to the suspicion by several government leaders that the protesters are merely trouble-makers instead of genuine victims of a development project. Because of such suspicion and mistrust, the plight of the protesters was not properly responded to—some might describe it as being totally ignored—from the very beginning. Instead, it was permitted to drag on until it exploded into a violent confrontation.

The protesters who are directly affected by the consequences of the Pak Mun dam are not against the dam by itself. Reluctantly though they have accepted as a fait accompli that they will have to live with the ugly-looking concrete structure which straddles the once beautiful Pak Mun river. In fact, it is the way that the Electricity Generating Authority of Thailand (EGAT) has been treating the affected villagers that has caused much of the widespread dissatisfaction that has led to the protests. For instance, the blasting of Kaeng Tana rapids in the Mun river.

EGAT has claimed all along that it was granted permission by the Forestry Department to blast the rapids

which are located in national park. But the National Park Law forbids such an act. It was also alleged that the blasting of the rapids was not mentioned in the environmental impact assessment study of the dam project. EGAT also claimed at the outset that less than 100 families would have to be evacuated because their land would be flooded. But in actuality, about 900 families will have to be resettled. So, withholding some damning facts or EGAT not telling the whole truth appears to be the main problem breeding public resentment.

Then there are the matters of the Schistosomiasis disease threat and the negative effect caused to the aquatic life by the blockade of the natural flow of the Pak Mun river. The affected villagers have every right to know—and to be informed by the state—if they are at risk of contracting the water-borne disease. And also whether aquatic life will be affected which will have an impact on their livelihood. To be fair, the points made by the protesters and environment groups are valid.

But instead of responding with straight facts as they should have, certain local authorities in Ubon Ratchathani resorted to an old tactic favoured by previous dictatorial regimes—which is to divide and rule. As such, impoverished villagers were manipulated and pitted against other equally poor villagers. This eventually developed into a showdown to give a pretext for intervention to put down the dam protest. Such a tactic should never be tolerated nor allowed by a government which respects freedom of expression and which is receptive to the voice of the people.

The Pak Mun dam is typical of the “top down” development projects in which people who are directly affected are excluded in the decision-making process or whose views are completely ignored. Accidentally, the sudden emergence of the issue has provided a test case to determine the “transparency” of the government of Prime Minister Chuan Likphai—whether it is receptive to the voice of the small people and whether it genuinely cares for their livelihood and the environment.

## ALBANIA

**Ambassador Signs Central, Eastern Europe Environment Charter**

AU2802154993 Tirana ATA in English 0918 GMT  
28 Feb 93

[Text] Tirana, February 28 (ATA)—Recently Albania signed in Budapest the charter on the founding of the Environmental Regional Center for Central and Eastern Europe. Albania was the only non-member country of this organization. The charter was signed for the Albanian party by Lisen Bashkurti, Albanian ambassador in Budapest.

The signing ceremony was attended by Peter Harvey, director of this center and others.

The goal of this charter is to provide scientific and educational assistance in the field of environment to the Central and East European countries with no intention to profit.

**Hazardous Pesticides Still at Bajze Station**

AU0603153993 Tirana ATA in English 1129 GMT  
5 Mar 93

[Text] Tirana, March 5 (ATA)—Precisely a year ago, on March 3, 1992, the first wagons with pesticides from Germany reached the railway station of Bajze. There was enthusiasm about them as an assistance in the difficult period of transition. But soon, enthusiasm was replaced by the serious worry: the pesticides brought in form of an aid to Albania by a private German firm were harmful and had expired. This was a good lesson but also a warning for a possible corruption.

Although a year has passed, still the problem is not yet solved. The wagons are still in Bajze. They are safeguarded day and night by armed policemen, but after 12 months this protection is impossible.

Ecologists seem to be silent although the worry of the inhabitants near the railway station is great. The workers of the station, too, are worried about the harmful effect of the pesticides.

Besides the worry about environment, there is another problem in Bajze. The Albanian Government has to pay the German railway association for the 365 days of the stay of wagons in the railway station. There are 17 wagons and 18 dollars should be paid for each of them for 24 hours stay in the station. This is a small debt added to the great inherited debt.

Sending them back to Germany seems to be impossible. Their burial in the territory of Albania would also cause undesired reactions. Their elimination claims great funds of money as well.

## EAST EUROPE

## BULGARIA

**Kozloduy Reactor Units To Be Connected to National Power Grid**

AU2602144493 Sofia Khorizont Radio Network in Bulgarian 1400 GMT 26 Feb 93

[Text] The Committee for Peaceful Uses of Atomic Energy has granted permission for the startup of the 1,000-megawatt No. 6 reactor at the Kozloduy Nuclear Power Plant. The reactor was shut down five months ago following an accident with the standby electricity supply.

Before the end of this week, it is expected that the Nos. 3 and 6 reactor units, with a total capacity of 1,400 Megawatts, will be connected to the national power grid, while the No. 5 reactor will continue to operate.

Yordanka Stoyanova from the committee's Public Information Department has announced that the No. 4 reactor is operating at 50 percent of its capacity. Because of a fault in the conventional equipment, a higher concentration of hydrogen has developed in the [word indistinct] generator. The defect is being eliminated by maintenance workers. The radiation situation at the plant is normal, and the safety system is carrying out its proper design functions.

**Deputy Trade Minister Reports Progress in EFTA Negotiations**

AU2702164093 Sofia BTA in English 1536 GMT  
27 Feb 93

[Text] Sofia, February 27 (BTA)—The free trade agreement between Bulgaria and the European Free Trade Association [EFTA] will probably be signed at the end of March this year, Deputy Minister of Trade Stanislav Daskalov said today returning from Geneva.

He informed that the third round of negotiations with EFTA was completed by initialing the multilateral agreement and all bilateral protocols on trade in agricultural products except for the protocol with Austria which was not represented in Geneva. Mr. Daskalov expects that the negotiations with Austria will be completed next week.

The multilateral agreement makes provisions for free trade in industrial goods, processed agricultural products, fish and sea products. In his opinion, it will open good prospects for Bulgaria's export as the agreement, expected to enter into force on July 1, 1993, removes all customs and other barriers to Bulgarian exports except for steel and textile.

**Government Takes Measures on Polluted Land**

AU0103212493 Sofia BTA in English 1920 GMT  
1 Mar 93

[Excerpt] Sofia, March 1 (BTA)—The cabinet approved today a bill for financing agriculture in 1993, moved in

parliament by a group of M.P.'s in February. According to the report of Mr. Georgi Tanev, minister of agriculture, in 1993 agriculture will need about 10 billion leva. Of them 2 billion will be needed for financing the cultivation and harvesting of winter crops, about one billion for the cultivation of perennial crops and about 6.5 billion for the cultivation of spring crops. According to preliminary estimates, the Ministry of Agriculture will be able to allocate only about six billion leva.

The government determined today the order and conditions for restoring property over environmentally polluted agricultural land, the ways of its use and reclamation in an ordinance on agricultural land contaminated by toxic substances and radionuclides above the admissible levels as a result of the industrial activities of state-owned enterprises of lasting consequences for the health and hygienic characteristics of the land which can be reclaimed. When the land cannot be reclaimed as a result of excessive contamination, the owners are indemnified at their request in compliance with the arable land ownership and use act. The government also approved a list of environmentally polluted regions prepared by the Ministry of the Environment. The reclamation of such land will be carried out by suitable technologies determined by a council of experts comprising representatives of the Ministry of Agriculture, of the environment and of health care which will also approve ceiling expenditure norms coordinated with the Ministry of Finance. The minister of agriculture was assigned to organize and coordinate the work of the council of experts.

#### Bulgarian-Romanian Commission Views Ruse-Giurgiu Problems

AU0203170293 Sofia BTA in English 1630 GMT  
2 Mar 93

[Text] Ruse, March 2 (BTA)—The Bulgarian-Romanian Coordinating Commission on Environmental Problems in the Ruse-Giurgiu Area held a meeting, its first this year, here today. The participants heard reports by the Environmental Protection Inspectorates in the two cities on air tests in the last three months. The analysis of the samples showed that, with rare exceptions, the maximum permissible concentrations of pollutants were not exceeded.

The commission adopted a programme on its work in 1993. It was decided that it will hold quarterly meetings, while its leadership will meet once a month. The Inspectorates will carry on their monitoring and the sides will continue to exchange information and analyses both on the air and the water and on the epidemiological situation in the two cities. Members of the two parts of the commission will attend ecoforums concerning the problems of Ruse and Giurgiu.

In a declaration addressed to the local authorities in Ruse and Giurgiu, the commission expresses its conviction of the need to form a mixed working group to work out a programme for economic, research, cultural, educational and health cooperation between the two cities

which face each other across the Danube. The commission believes that this will widen the opportunities for solving the environmental problems in the area.

The Bulgarian-Romanian Environmental Commission suggested yet another idea. In its view, the River Danube may be polluted by petrochemicals if the embargo against Serbia and Montenegro is busted again. In this connection, the commission decided to approach immediately the two municipalities with recommendations to work out, within ten days, a specific programme of action for their specialized bodies in the event of an environmental disaster on the river.

#### SLOVAKIA

##### EC Wants 'Speedy Solution' to Gabcikovo Dam Dispute

AU0503140493 Prague CTK in English 1958 GMT  
3 Mar 93

[Text] Bratislava, March 3 (CTK)—The European Community (EC) Commission wants to reach a speedy solution to the Slovak-Hungarian dispute over the Gabcikovo-Nagymaros project on the Danube, director of the EC Commission Foreign Relations Department Pablo Benavides told journalists today.

He said the solution must ensure that the Danube's ecosystem will not suffer irreversible damage, and at the same time that Czechoslovak and Slovak investments in the twin-dam project will not be wasted. It is possible to put these two requirements in harmony, Benavides said.

The EC Commission official was today received by Slovak Premier Vladimir Meciar, at whose invitation he came to the Slovak capital. He will also meet with experts of the Slovak Foreign Ministry to discuss the conclusions reached by the tri-lateral commission of experts from the EC, Hungary and Slovakia. On Thursday [4 March] he will discuss them with Hungarian experts in Budapest.

Hungary has proposed that Slovakia and Hungary should jointly submit their dispute over Gabcikovo to the International Court of Justice in The Hague, but agreement on the joint request has not yet been reached.

#### HUNGARY

##### Environmental Officials Term Bos Talks 'Fiasco'

AU0303134993 Budapest MAGYAR HIRLAP  
in Hungarian 25 Feb 93 p 3

[Ivan Scipiades article: "Risky Attempt"]

[Text] Emotions have flared up again regarding the Bos hydroelectric power station after the relative calm and silence of several months. Several people in Parliament's Environmental Protection Committee called the results of the Hungarian-Bos diplomacy a fiasco, and they also

criticized the Foreign Ministry; prior to this, the Environmental Protection Ministry and Parliament's Environmental Protection Committee hurled accusations at each other. Statements and messages aimed at emotions and instincts are again on the rise. There is a "situation," and a rather piquant one at that.

Both Hungary and Slovakia achieved something that can be regarded as a victory at the talks aimed at temporarily settling the Bos debate (of course not on the same issue), and both countries also forced each other to take measures. Hungary's achievement is that Slovakia will probably have to accept the compromise proposal concerning the distribution of water because, if it rejected it, it would say no to the EC and not to Hungary. However, the other side's achievement lies in the fact that it succeeded in delaying this step until the rebirth of flora and fauna in spring. In other words, Hungary failed in securing an agreement on the distribution of water before spring, while the Slovaks maneuvered Hungary into a situation in which it is forced to build a submerged dam in the Danube floor to maintain an adequate water level, even with a fraction of the amount of water flow demanded by Hungary. The water level increase through the submerged dam is in line with the Hungarian-CSFR [Czechoslovak Federated Republic] state agreement of 1977 on the basis of which the construction of the Bos-Nagymaros system began and which Hungary regards as invalid, while Slovakia regards it as valid.

A risky attempt begins with the construction of the traverse dam. The risk is that it might succeed. What if there will be no ecological catastrophe involved, as the Hungarian Government claims? What if this system will really solve the problem of the Szigetkoz desiccation irrespective of Bos, as the Slovak Government claims? What if the situation will not deteriorate, despite the traverse dam? Both the believers in an ecological catastrophe and the believers in an ecological panacea are able to refer to a whole team of experts, even to justify political arguments. However, an international court (that will refuse to deal with the technical, ecological, shipping, and other issues as political, national, or spiritual categories) might regard such a solution as the optimal solution, or a solution with the least damage.

For the experts and decisionmakers, the issue of the traverse dam or dams means a choice between short term and long term, symptomatic and radical solutions, and various disadvantages accompanied by certain advantages. This is the reason for the new war of nerves that, according to all the signs, will escalate in the coming weeks. The decisionmakers and people who want to have a say in the decisions will bombard public opinion with penetrating pseudo-arguments.

Emotions will not solve anything here, especially the artificially stirred emotions of the population.

## POLAND

### Report Examines Effects of Silesian Pollution on Children

93WP0084 Warsaw ZYCIE WARSZAWY in Polish  
2 Feb 93 p 11

[Article by Krzysztof Walczak: "The Death Triangle"]

[Text] The "death triangle"—that is what Bytom, Chorzow, and Zabrze are called. According to the latest statistics, the health and life of 4 million people in Silesia, including a million-and-a-half children, is being endangered. The question as to whether or not to liquidate the polluting firms and increase unemployment becomes more and more horrific.

Is it possible to give birth to a healthy child in Upper Silesia? The head of the Academy of Medicine clinic in Katowice, Prof. Irena Norska-Borowka, does not give a direct reply to the provocative question. But in a report published by the "Silesia" Ecological Foundation on the subject of the health of Silesian children, Professor Norska-Borowka cites some telling statistics. She says that 50 percent of the pregnancies and births in Katowice Voivodship proceed abnormally. On "average," which means that in some regions this percent is much higher.

Particularly at risk, according to Silesian doctors, are those towns in the Upper Silesian Industrial District in which there is a high infant mortality: Bytom, Chorzow, and Zabrze.

Prof. Irena Norska-Borowka and her colleagues in the Katowice Academy of Medicine cite the epidemiological studies done on the effects of air and soil contamination on the health of children up to four years of age. It has been determined that infant mortality and diseases have a correlation to the largest concentrations of fluorine, dust, sulfur dioxide, tar substances, formaldehyde, lead, cadmium and phenol, in the Upper Silesia Industrial District. Infant mortality in Bytom, Chorzow, and Zabrze during 1985-89 ranged from 20 to almost 30 per thousand. The Polish average for these years was several per thousand. The lowest indicator in the world was recorded in Sweden—an average of five per thousand. In 1989 in the Rozbark section of Bytom, infant mortality per thousand live births rose to the frightening figure of 53. In another part of Bytom, Bobrek (an industrial section), the percentage of infants with a birth weight below 2,500 g, was as high as 16.1, while the average in Poland was twice lower. Silesian pediatricians and epidemiologists say that the birth of a child weighing less than 2,500 g is related to environmental pollution and has a negative effect on the chances of survival through the first year. Those most frequently ill are the premature babies, those most seriously ill are the children living in the center of Chorzow, near Kosciuszko Steel-works.

The term "death triangle," therefore, is not without basis. Prof. Norska-Borowka says outright that the ecological disaster in Upper Silesia not only is responsible for more infant deaths, but is also responsible for the growth in the number of children who are incompetent due to brain damage, epilepsy, mental deficiency, various behavior disorders, and psychiatric syndromes, e.g., autism.

The epidemiological studies made by the doctors from the Katowice Academy were cited during the hearings on the largest polluters in Silesia. Now, when the workforces of many plants, e.g., the Zabrze Coking Plant, are resisting the liquidation of workplaces, the report of the "Silesia" foundation should be compulsory reading. If the people in Kosciuszko Steelworks, the Zabrze coking plants, and the metallurgical polluters in Silesia Town and Piekary do not believe that they are losing their own health and naively believe that they have been able to adjust to difficult conditions, then perhaps the frightening picture of the state of health of the Silesian children will convince them that the situation is tragic.

### Carpathian 'Euroregion' Causes Controversy in Sejm

AU0803131593 Warsaw PAP in English 1901 GMT 3 Mar 93

[Text] Warsaw, March 3—The Sejm (lower house) today returned to the debate on the government's information on the circumstances and reasons for the creation of the "Karpaty" ["Carpathian"] Euroregion which includes border areas of Poland, Ukraine, Slovakia and Hungary.

The debate was interrupted on February 20 when opposition deputies and members of Christian National Union (ZChN) criticized the idea of Euroregions.

The Sejm heard a report by Foreign Minister Krzysztof Skubiszewski who once again defended the general idea of creating Euroregions and of the recent formation of Euroregion "Karpaty".

Responding to accusations, Minister Skubiszewski said that objections towards the creation of Euroregions might result from insufficient knowledge on the matter and stressed that the government did not surprise the Sejm with its approval of the idea of creating the Euroregion as an announcement of such a move was included in the government's policy speech earlier approved by the Sejm.

Skubiszewski pointed to the need of linking the state and national interest with the European interest, emphasizing that the creation of the Euroregion "Karpaty" in no way violated the sovereignty of Poland since no administrative structure transgressing borders was created.

The minister's speech was followed by a debate in the house. Meanwhile, deputy governor of Krosno province

Ryszard Janocha said that ecological and economic programmes of the Euroregion "Karpaty" will facilitate the creation of new jobs.

By the middle of March, each of the sides participating in the Euroregion "Karpaty" project will work out a programme of its activity, including draft plans on environmental protection, construction of new roads and border crossings.

Aldermen from the Przemysl town council addressed a petition to the president, the prime minister and the Council of Europe based in Strasbourg, protesting over the manner of the Euroregion's creation.

According to the signatories of the protest, the government administration has violated basic principles of local democracy because individual communes of Przemysl province were not asked to express their opinions on their access to the Euroregion in the form of resolutions, and there was no decision on the matter of the local government of the province.

Members of the boards of the Przemysl and Krosno chapters of the Christian National Union expressed a similar opinion.

### Officials on Costs of USSR Army Ecological Damage

LD0403193993 Warsaw Third Program Radio Network in Polish 1600 GMT 4 Mar 93

[Text] The main environmental protection inspector informed us that ecological damage connected with the stay of the former Soviet army in Poland would cost about 18 trillion zlotys. According to him, underground water supplies for Swinoujscie and, in the future, for Szczecin and Torun, are in danger. General Zdzislaw Ostrowski, government plenipotentiary during the Soviet Army's stay in the country, said that the Russian side owed us 116 billion zlotys without interest for the leased property. We have been paid only 2,000 dollars since last year. Ostrowski thinks that there are no chances to recover this debt.

## ROMANIA

### Cernavoda Nuclear Plant Construction Progress, Safety Viewed

93BA05804 Bucharest TINERETUL LIBER in Romanian 13, 15 Jan 93

[Interview in two installments with Ionel Bucur and Viorel Marculescu, directors of the Cernavoda Nuclear Plant Project, by Dumitru Manolache; place and date not given: "No Atomic Bomb Will Explode..."]

[Text]

[13 Jan pp 1, 2]

Considering that the Cernavoda Nuclear Plant [CNC] represents one of our largest economic investments and that its operation will significantly contribute to the country's electric power production, we felt it would be appropriate to inform our readers about its current stage of construction, the safety measures taken in case of accident at the plant, as well as other details of the activities conducted there. That is why we addressed ourselves to the directors of that major installation, Ionel Bucur and Viorel Marculescu, who were kind enough to speak to us.

[Manolache] Gentlemen, could you tell us about the current stage of the CNC project?

[Bucur] A new contract has been signed between Renel and Aeci Ansaldo, which stipulates completion of construction and installation at Unit 1, starting the plant under the responsibility of the consortium, training 100 Romanian specialists at a similar plant in Canada, and initial operation for one and one-half years under the responsibility of the foreign partner. In the contract, the operation period of the first unit was accepted by the partner as December 1994. In June-July 1991, until the contract between Renel and the consortium was signed, Unit 1 was about 58-59 percent completed. I want to point out that the objective of the contract was work completion at Unit 1, verification and maintenance at Unit 2, and maintenance at Units 3-5. The contract also included a credit of \$410 million advanced by one bank in Canada and another in Italy. In addition, Renel ordered a study (Bosard) paid through a PHARE [Economic Reconstruction Aid for Poland Hungary] program, to outline a plan for the development of the national power system during this transition period and up to the year 2000. The study will show that work on the first Cernavoda unit must definitely be continued and completed; that financial resources must be found to continue activities at the second unit; that work on Units 3-5 must be continued after 2000 as a function of the nation's economic growth and of power demands from our neighbors; as well as other data regarding plants that operate inefficiently with low output. Immediately after the contract was signed, we undertook a mobilization program at Cernavoda: we created a plant management team that will include 300 Canadian specialists and 450-500 Romanian employees, whose role will be to support this team and to learn how to coordinate and operate such a plant. For the other units, we expect to carry out this coordination with a much smaller number of foreign specialists. This joint team currently has 250 Canadians and 350 Romanians. Together with this organization and implementation initiatives, we continued our construction activities. At the present time, we finished 68-69 percent of the project on the first unit. This means that construction work is more than 95 percent completed.

[Marculescu] 70 percent of the mechanical installation, and more than 25 percent of the electrical and other

installations. As a result, the starting date for the first unit—end of December 1994—remains valid and we believe that we can achieve it.

[Manolache] What will be CNC's contribution to the country's electric power production?

[Bucur] More than 10 percent of the country's electric power needs will be met by Unit 1 at Cernavoda. During the first part of 1992 we conducted one important task, pressure testing of the reactor building with all the nuclear systems inside it, which was completed successfully.

[Marculescu] The test showed that the structure behaved satisfactorily and that it returned—if we must say so—to its initial volume after the test.

[Bucur] I also want to say that we powered up the 100-kilowatt station that, for practical purposes, supplies the national system unit.

[Marculescu] Normally, when the reactor is stopped, it must be supported with power from the national system. We were able to test the pumps—which for the first time were made in Romania—used to cool the turbine condenser. The test was conducted here, on site, in a closed loop, and we were glad to see that things went very well.

[Manolache] A complex installation such as this one would obviously be faced with a rather serious danger in case of a nuclear accident. People still have vivid memories of Chernobyl. In this respect, what can you tell us about the reactor's safety system?

[Bucur] We have several radiation safeguard barriers that prevent radioactivity from spreading into the environment. From the standpoint of the radiation source (the fuel—natural Uranium 235) a first barrier is that it is a solid, in the form of a carbocil [translation unknown] pellet. As a solid, it does not change its shape during fission, except if it is defective. These pellets are placed into zirconium tubes called fuel rods, which are hermetically sealed at both ends. Should some of the pellets become deformed, the products that emit radiation remain in the tube; this is the second radiation safeguard barrier. Thirty-seven of these rods form an assembly; these assemblies are placed into pressure tubes called fuel channels; twelve assemblies form a fuel channel. The channels are interconnected in a closed, hermetic system, called the primary heat transportation system. This is the third radiation safeguard barrier.

[Marculescu] The fourth barrier is the concrete shell itself, and the fifth barrier is the exclusion zone, a circle with a radius of one kilometer whose center is the center of the reactor. The only activities allowed in this circle are those of the plant.

[Bucur] In order to discuss safeguard systems, I want to make a rather prosaic comparison between a nuclear plant and a conventional plant: in a conventional plant, the energy source is the boiler. When the fire is out, the energy also stops. In a nuclear plant, the energy source is

the reactor: in this case, even if the reactor is turned off for some time period, it continues to emit thermal energy, which must be captured even after the shut down. That is why systems have been designed to capture this remaining heat.

[15 Jan pp 1, 8]

[Marculescu] We probably should mention the shutoff systems, as well as safety and post-security. The reactor has two shutoff systems: one with 28 vertical shutdown rods, which stop the nuclear reaction when they are rapidly lowered; and the "poison" injection shutoff system (a neutron absorber: gadolinium nitrate). These are completely independent of one another. There are also other special safety systems: for instance, the rod injection system in the active zone, which operates in case of a serious accident, such as rupture of a collector in the primary circuit. In this case, water is injected into the reactor to capture the heat, as my colleague has already mentioned. I should point out that a normal cooling system operates when the reactor is shut down. The safety systems operate only in case of accident.

[Bucur] Let us assume that a large conduit has broken inside this concrete cylinder; boiling water will then be created and raise the pressure. This would trigger the sprinkler system in the shell, consisting of 1720 heads that spray cold water from the pool located between the two shells of the reactor, cooling the steam and lowering the pressure; the pool has a capacity of 3,000 cubic meters of water. The cooling pumps have electric power systems. We have a conventional power system (class III) which provides power to our users even if the national power system fails, and which consists of diesel generators. And if this class III system fails to operate in case of an accident, we have the so-called emergency power, consisting of two separate diesel generators designed to withstand earthquakes; they supply all the installations that must operate to cool the reactor.

[Marculescu] There are also other safeguard systems: emergency water supply...

[Bucur] What we need is water. Assuming that a disaster occurs on the Danube, we have provided sufficient capacity to cool the reactor.

[Marculescu] And since we do not want to hide anything, we'll tell you that start-up of the first unit depends on the success of acceptance tests for these 8-megawatt diesel generators, which did not pass the first trials. If they do not pass their tests, we will have to consider importing them. It is a source of concern.

[Manolache] *The press has mentioned the social problems that face the CNC personnel. What can you tell us about that?*

[Bucur] Cernavoda was a very significant objective during the past regime. Together with construction plans, there were organization plans for the work site: it was estimated that a settlement of 3,600 workers would

have to be established. As the work proceeded, and with a poor understanding of the situation, all sorts of people were brought here: draftees, soldiers, temporary workers, all in all a very poorly qualified work force. And so, this settlement, which should have had a maximum of 4,000 people, ended up having 17,000 by the time of the Revolution! You can imagine how they were housed! Not to mention their quality! Many of those who were brought here either didn't have a job or were sent because their plants wanted to get rid of them. You can imagine what they did: they destroyed, they stole, and the settlement was pathetic. Immediately after the Revolution we reduced the personnel to about 10,000 people. Without money, we continued the activity at a more reduced pace. Right now, there are slightly over 5,000 people at the work site. We expect that this number will drop to 3,000 during the next year.

[Marculescu] There are still people in the settlement who have been unemployed for years, have no housing, and are staying because they have nowhere else to go. In January of last year about 52 families were "inherited" from the time of the Canal project.

[Bucur] Immediately after the Revolution, what we did was to destroy all these barracks, we cleaned the area. We left standing only the buildings that were in good condition, in which we tried to improve living conditions. In order to assure a standard of living as normal as possible, we started and conducted a program to organize the town of Cernavoda; the apartment houses you see in the town are one result. The program also provided for a hospital, a movie house, a club, and several stores. But after the Revolution no more program! The budget no longer allocated any money. We therefore appealed to Renel, and with the help of the unions, we managed to convince the Romanian government to approve a social program that included the construction of housing for operating personnel, child care centers, stores, a food market, improvements in the drinking water system, as well as the construction of a hospital and of a bridge over the canal. These were done primarily under the Stolojan Government.

[Marculescu] The social program was last estimated at 30 billion, with 12 billion expected from the budget and 18 from Renel.

[Bucur] What did we achieve: Approvals took more than six months. We started using the child care center and the kindergarten, we built a food-store site, and after many negotiations we started to raze the old high school while starting construction on a new one and of a school with 24 classrooms.

[Marculescu] More than half of the heating network is currently completed.

[Bucur] We have 100 apartments under construction. We have opened 19 of them and we are about to open 19 more in another unit; the whole complex will be opened in January-February. We have also completed documentation for another 100 apartments in buildings that we

bought at the structural construction stage. We have started installing the drinking water system. Another 400 service apartments for our workers are under construction. We are also contemplating the construction of private homes, which will categorically change the standard of living. We have thus crossed all the difficult bridges, but the problem is that we do not have very much money. In 1992, the budget gave us 20 billion lei; Renel was supposed to make up the difference to 45 billion, and it did, but the problem is that it also has to receive just about that much from its consumers. It is possible that the currency will enter the country, because the credits are draining away, and we have problems with lei! Let us hope that the new government will continue the reform and will give us the money we need to complete all the projects that we have undertaken.

## CROATIA

### Croatia Reportedly Storing Nuclear Waste in Serb Regions

LD0303204693 Belgrade TANJUG in English  
1938 GMT 3 Mar 93

[Text] Geneva, March 3 (TANJUG)—Croatia has drawn up a plan to store nuclear waste in areas completely or predominantly populated by Serbs. Some of these regions are controlled by the United Nations Protection Force [UNPROFOR].

Croatia has already been secretly dumping nuclear waste in western Slavonija, i.e., Sector West of the United Nations Protected Area (UNPA).

The UNPROFOR has been deployed in areas within the former Yugoslav Republic of Croatia where the Serbs make up the majority population. Upon Croatia's secession from Yugoslavia, the Serbs there set up the Republic of Serb Krajina.

Head of the Federal Republic of Yugoslavia's [F.R.Y.] permanent mission in Geneva Vladimir Pavicevic submitted extensive documentation about Croatia's intentions and activities to the Director of the Human Rights Center Ibrahim Fol and co-Chairmen of the Geneva Conference on the Former Yugoslavia Cyrus Vance and Lord David Owen.

One of the documents the F.R.Y. mission submitted was the report on storing nuclear waste the Croatian Government drew up for the symposium currently held in Tucson, Arizona.

The Yugoslav mission warned that Balkans and Europe would meet with ecological disaster if Croatia carried out its plan, since the natural configuration of the locations did not meet even minimum conditions either from the geological nor the seismological point of view.

The F.R.Y. will do its utmost to regularly inform the international community of the developments and expects of it to take action to prevent the implementation of this monstrous plan.

## INDIA

### Conference To Familiarize Industry With Montreal Protocol Held

93WN0290 Madras *THE HINDU* in English 29 Jan 93 p 6

[Text] New Delhi, Jan. 28—The first small step to prepare the country for a phaseout of the ozone depleting chemicals—CFCs, KCFCs and halons—as envisaged under the Montreal Protocol was taken today when a two-day conference opened here to familiarise Indian industry with the details of the protocol.

Mr. Kamal Nath, Minister of State for Environment and Forests who is currently also the chairman of the Bureau of Parties to the Protocol, urged Indian industry earnestly to prepare projects connected to the phaseout, including research and development, so that these could be quickly processed for funding through the multilateral fund dedicated to the implementation of the protocol.

Representatives of over 40 industries that produce ozone depleting chemicals or use them in refrigeration, aerosol sprays, metal and electronics cleaning and fire fighting, are attending the conference which will give them the opportunity to interact with the United Nations Environment Programme [UNEP] and officials of the multilateral fund. Mr. Kamal Nath, who inaugurated the conference, said that concrete information from the industry would be necessary to plan a countrywide programme for the phaseout. He stressed the importance of industry taking up the challenge of research and development of substitutes for the ozone depleting chemicals and promised to take these up for funding from the multilateral agency.

Currently, only a few multinationals have the substitute technology, but he said there was no reason why Indians could not make the effort towards research and development in this critical area.

The Montreal Protocol was the first international agreement that has a concrete programme for international cooperation for the common good, and success in its implementation would set the tone for future international protocols in the area of global environment issues, Mr. Kamal Nath said.

He said any further expansion of industry in this area should use the new eco-friendly technology. At the same time he also assured the industry that the Government would not allow India's economic interests, both of the industry as well as the consumers, to be sacrificed. But the various sectors of the industry must not work at cross purposes if a viable countrywide programme is to be worked out to our advantage.

He said the various clauses of the Protocol were linked and that implementation depended on the satisfactory functioning of the clauses related to transfer of technology and the funding mechanism.

Among those attending the conference are Mr. Madhav Sarma, coordinator of the Ozone Secretariat with UNEP who was earlier the chief Indian negotiator for the protocol, and Mr. Omar El-Arini, chief officer of the multilateral fund. The conference has been organised jointly by the Ministry and by the Tata Energy Research Institute.

The Ministry has already got a report prepared by the Department of Industrial Development on the implications of the phaseout for India. This report is being finalised in the light of the recent decisions taken at Copenhagen.

The protocol became effective in September last year and the multilateral fund has been recently activated. India is keen to get the industry to put its act together as early as possible to enable it to draw on the multilateral fund.

### Minister Scores 'Indifference' to Rio Spirit

93WN0311A Calcutta *THE SUNDAY STATESMAN* in English 31 Jan 93 p 7

[Text] New Delhi, Jan 30—While expressing "reasonable confidence" that the most threatening of the oil slicks off the Nicobar Islands would emulsify as a result of the action taken by the Coast Guard, the Minister of State for Environment and Forests today lashed out at the international community for its indifference to the situation created by the massive spillage from the stricken supertanker, Maersk Navigator.

The spirit underlining the celebrated bio-diversity convention signed at the Earth Summit in Rio last year was nowhere in evidence, Mr. Kamal Nath told a press conference, stressing that "shared concerns" was the essence of that spirit. A few queries had been made about the extent of the spillage but no international assistance was offered, he regretted.

It would have been "appropriate" if countries which had the equipment, expertise and experience had offered India help in tackling its first problem of such magnitude, Mr. Kamal Nath said. India had refrained from asking for help because that might have resulted in the arrival of only the commercial operators who deal with such matters, and then present a hefty bill.

Reports of the collision between the Maersk Navigator and an unloaded Japanese tanker (now reported to be absconding) in the Straits of Sumatra had been highlighted in the international media, he observed. If the spirit of "shared concerns" was to generate global response, that coverage ought to have sufficed to initiate it.

Mr. Kamal Nath said he would be taking up with the concerned Ministries the question of more stringent regulations for vessels passing through the Exclusive Economic Zone, monitoring their movements, as well as the issue of fixing responsibilities and claiming damages.

No damages had been claimed so far because the impact of the spillage was yet to be assessed. An initial estimate might be available next week.

Without suggesting that the threat had abated, Mr. Kamal Nath said that reports received from the site this morning indicated that the main rent in the hull of the supertanker had been plugged, there were still some smaller leakages which ought to be stemmed by early next week. The salvage crews had to wait for the vessel to cool, she had been on fire for days, before making repairs.

In fact the next fortnight or so would be a testing period. Till yesterday, when he made an aerial survey and had discussions with officials in the Andamans and Nicobar Islands, the supertanker was being towed around in

circles by the seven salvage tugs operating in her aid. In that process another slick was being created.

Only when all leaks were plugged and she was taken to port for repairs—no port would permit entry as long as the leaks persisted—or the estimated 250,000 tonnes of crude still on board were transferred to another vessel, would the potential source of even more serious trouble be eliminated.

The threat from the three or four major slicks would remain, and a lot would depend on how effective would be the chemical dispersants being spread on them by ships and aircraft of the Coast Guard. The wind and currents were taking the slicks away from the southern end of the archipelago during the day, but they reversed their direction at night so there was not too much comfort on that front.

## RUSSIA

### German-French Reactor Safety Bureau Opens in Moscow

PM0203145593 Moscow *IZVESTIYA* in Russian  
25 Feb 93 p 1

[Yuriy Rogozhin report: "Center for Russian Nuclear Power Station Safety Opened in Moscow"]

[Text] The opening of a German-French Nuclear Reactor Safety Bureau was announced at its villa near the Kurchatov Institute.

The new joint venture has been created by the German Society for Technical and Reactor Safety (GRS) and the French Institute of Nuclear Protection and Security (IPSN) [bracketed abbreviations published in Latin] with support from the Kurchatov Institute and the Russian State Committee for the Supervision of Nuclear and Radiation Safety. The opening of the bureau was attended by Klaus Toepfer, FRG minister for the environment; Andre Billardon, [French] minister delegate for energy; the two countries' ambassadors and their officials; and the Russian nuclear power industry beau monde [as published].

The Bureau's main purpose is to serve as a "field observation station" as close as possible to the former Soviet nuclear power stations, which are causing the Western public concern. From Moscow they will accurately channel the flow of Western resources intended to bring our nuclear power industry up to European safety standards. In addition, the Bureau will be a center for the exchange of information on the state of nuclear power stations and the exchange of specialists, and will also help to set up competent and independent structures for the implementation of measures to increase Russian nuclear power station safety.

### Uranium Sales Agreement Signed with U.S.

PM2602130993 Moscow *IZVESTIYA* in Russian  
26 Feb 93 p 3

[Aleksey Portanskiy report: "Weapons-Grade Uranium from Russia Will Go To Fuel U.S. Nuclear Electric Power Stations"]

[Text] The United States will buy from Russia 500 tonnes of highly enriched uranium being extracted from the Russian nuclear munitions which are subject to reduction in accordance with treaty obligations relating to disarmament and arms control. After processing, this uranium will be used in U.S. nuclear power reactors.

V. Mikhaylov, Russian Federation minister of atomic energy, and General (Retired) U. Berns, leader of the U.S. delegation on the Russian-U.S. Joint Commission

for Dismantling Nuclear Arms, signed an intergovernmental agreement on the utilization of highly enriched uranium extracted from nuclear weapons in Washington 18 February.

Russia and the United States declared their intention to cooperate in this sphere as long ago as the end of last August. All this time painstaking work had been done on a text to suit both sides.

In accordance with the signed agreement, the Americans will buy from us on a contract basis the low-grade [nizkoobogashchennyj] uranium obtained from highly enriched uranium in Russian plants. The initial delivery of the product is planned, as far as possible, no later than 1 October 1993.

During the first five years 10 tonnes of highly enriched uranium will be processed each year, and then this figure is to increase to 30 tonnes. According to preliminary estimates, the proceeds from uranium sales will amount initially to approximately \$200 million a year and then, correspondingly, to three times as much.

According to authoritative assessments, the agreement takes each side's interest strictly into account and is mutually advantageous. It is known that, given our huge natural stocks of uranium, the Russian quota on the world market remains insignificant. The signed agreement enables Russia to sell uranium to the U.S. market outside the existing quota and does not affect our relations with other partners on the world market. In addition, the agreement opens up the possibility of loading our uranium-processing enterprises, which are significantly more advanced than the U.S. ones in terms of their capacity and technical level.

By helping Russia to get rid of weapons-grade uranium and at the same time to turn a profit, the Americans themselves will be none the worse off either. Their long-standing position on the world uranium market as a monopolist cannot fail to give the United States a definite advantage—the possibility of discussing [obgovorit] a purchase price for our uranium that is advantageous to them. In the opinion of our specialists, the future profits will enable the Americans to modernize their obsolete uranium-processing plants and will also cover the \$400 million allocated by the U.S. Congress last year for conducting operations to transport and dismantle our nuclear missiles.

The agreement strictly limits the framework for the use of uranium acquired from us: It can be used exclusively for peaceful purposes. Another important circumstance is that the agreement will contribute to the nuclear weapons nonproliferation regime, the physical protection and stockkeeping of nuclear materials, and environmental conservation.

The funds obtained by Russia will be used for purposes of converting defense enterprises, for improving the safety of nuclear electric power stations, for ecological programs, and to support science.

### Army General Staff Sets Up Environment Protection Directorate

PM0203160193 Moscow ROSSIYSKIYE VESTI  
in Russian 26 Feb 93 p 2

[Mikhail Semenov report under the "Army" rubric: "Environmental Forces Created: Russian Federation Armed Forces General Staff Organizes New Structure—Directorate for the Environment and Special Means of Protection"]

[Text] For a long time the Army was cut off from our environmental problems and difficulties by an impenetrable wall, as it were. Although the Army contributed to the emergence of those problems and difficulties, the official instructions of the former Union Defense Ministry, which for the most part remain in force to this day, forbade unit commanders to allow access to civilian commissions.

"Our directorate," said its chief, Candidate of Technical Sciences Colonel Sergey Grigorov, "which has been set up on the initiative of the Ministry for the Protection of the Environment and Natural Resources, has brought together fragmented subunits and small agencies, whose activity was, moreover, confined to monitoring functions.

"Our main task is to organize and coordinate environmental protection activity in the Russian Armed Forces with the aim of keeping the impact of military activity on the environment to the minimum and ensuring the protection of personnel operating in extreme conditions..."

It is impossible here not to recall the Chernobyl "clear-up personnel," who operated in difficult conditions at the nuclear electric power station at risk to health and life. And certainly no one who looks around is going to accuse me of exaggeration: At the slightest motivation, we call in the Army to help. And that is only natural: It has the specialized equipment, facilities, and men capable of tackling not just its official tasks. But, on the other hand, such help is also somewhat chaotic in nature now, it lacks a linchpin, as it were.

But this Directorate does not just function as a linchpin, it has its own Armed Forces' environmental backup program, which has become a section of the "Russian Environmental Safety Overview." Its basic provisions, Sergey Grigorov assured me, will be reflected in the military doctrine.

The Directorate is drawing up recommendations for each branch of forces: One imperative requirement is that a mandatory environmental audit be carried out during exercises.

I could not during my conversation with the directorate chief avoid the question of the burial of radioactive waste in the Kara Sea. The radiation situation there is normal, he assured me, and this has also been confirmed by foreign specialists, including Norwegian specialists.

I am sure that we will soon start citing the authoritative opinion of the Directorate for the Environment and Special Means of Protection, given that its staff includes six doctors of science and more than 10 candidates of science in the spheres of chemistry, medicine, meteorology, the environment...

### Interpol Conference Views Illegal Trade in Strategic Materials

PM0803155593 Moscow ROSSIYSKIYE VESTI  
in Russian 6 Mar 93 p 8

[Viktor Alekseyev report: "Whither Is the 'Red Mercury' Leaking?"]

[Text] The scale of the plundering of the republic recently reached an unprecedented scale. In their desire to "skim off" hitherto unprecedented profits, underground business dealers and newly emerged speculators, not without support from high-ranking functionaries, are shipping abroad virtually everything that can be shipped. According to law enforcement organs' estimates, the shipment of strategic raw materials abroad poses a special danger.

The appetite of our country's business sharks is truly insatiable. The scent of foreign currency long ago dulled any sense of duty to and pride in our great-power state. More than 600 tonnes of nonferrous and rare-earth metals were embezzled from different enterprises in the metal processing industry in just a few months of last year alone. Some 45,000 tonnes of nonferrous metals were exported from Russia to Scandinavia via Estonia just between May and September 1992. The shadow economy's revenue last year was in the order of some 2.5 trillion rubles.

The West is literally choking on the influx of "inobtrusive" services offered by Russian businessmen, whose main principle is to steal and resell. Obsolete submarines, caterpillar tracks, pipes, and timber are one thing—but strategic raw material is something quite different. There is already serious talk abroad, questioning whether the Russians are helping certain countries to create [sozdavat] the atom bomb. A series of publications abroad have again carried reports about the superstrategic "red mercury" which is incessantly leaking from Russia to West European countries.

All these topical problems were the subject of discussion by specialists at Interpol's recently held first European conference on questions concerning the illegal transit of nuclear materials. Militia Lieutenant General Vasilii Ignatov, chief of Interpol's National Central Bureau in Russia, commented on the results of the conference:

"The conference was attended by representatives of virtually all European countries, as well as the United States and Canada. Speeches were delivered by nuclear specialists from Germany and by criminal police specialists from the developed countries. We also presented our report, which was honest and frank. This is a very

complex question, since it poses enhanced danger to mankind. Whereas drugs bring evil to those who use them, nuclear materials pose a colossal danger to all around them. It is no secret that radioactive materials are still being embezzled in our country, but the emphasis must be correctly placed. There is not a single recorded instance—and this was confirmed by everyone—of embezzlement, loss, purchase, or sale of weapons-grade nuclear materials, in other words materials which could be used to make a nuclear bomb, like highly enriched uranium or plutonium. As a rule, we are talking about slightly enriched radioactive materials or ion-emitting materials, including the broad range of rare-earth metals which have been and still are widely used in different technologies and industrial sectors. It is, however, worth admitting honestly that there have been specific instances of rare-earth and radioactive materials being shipped abroad from Russia through nearby foreign countries, primarily the Baltic countries.

"Now as regards 'red mercury.' One of Germany's leading scientists said in his speech at the forum that, at the dawn of the emergence of nuclear weapons, scientists had agreed that nuclear materials would be referred to as 'red mercury.' Now these terms are being confused. No red mercury exists in nature, either factually or physically, and such an element is impossible to create.

"What is being sold, as a rule, are different reagents. There have been instances when any red materials have been described as 'red mercury.' But the problem exists nevertheless. This is why a meeting of specialists elaborated an entire system of measures for the notification and training of police forces and the population, and developed measures for urgent notification in the event that any nuclear materials are detected or a radiation danger develops.

"Let me emphasize once more that law enforcement organs will not have to follow radioactive traces abroad if we impose in our own country effective control over the storage and utilization of such materials, something that is unfortunately still lacking."

#### **Navy Official Contradicts Greenpeace Submarine Accident Data**

*OW0103173793 Moscow INTERFAX in English  
1607 GMT 1 Mar 93*

[Report by diplomatic correspondents Andrey Borodin, Dmitriy Voskoboinikov, and Igor Porshnev; from the "Diplomatic Panorama" feature—following item transmitted via KYODO]

[Text] Naval specialists have repeatedly analysed the data cited by the Greenpeace organization. They came to the conclusion that such data should be treated with caution, since Greenpeace representatives often use unverified or distorted information, a highranking member of Russia's Naval Headquarters told IF [INTERFAX] on Monday. He commented on the report

published by Greenpeace recently "with fresh information concerning accidents that occurred during the "Cold War" on board Soviet nuclear-powered submarines".

Several facts cited in the report did take place, he conceded. Nevertheless the official cast doubt on the authenticity of the data concerning 126 accidents that allegedly took place on board Soviet and Russian submarines between 1956 and 1993.

According to him, Greenpeace's information that faulty reactors were sunk in the vicinity of the Novaya Zemlya Islands in the Arctic Ocean is false. Faulty submarine reactors have never been sunk anywhere, the naval official said. What was sunk in the North is reactors from civilian ice-breakers, he said. Now a search for them is under way, and the feasibility of their recovery for the purpose of subsequent safe burial is being calculated, he added.

The number of 35 cited in the report "conforms approximately" to the number of nuclear-powered subs written off as obsolete by the Pacific Fleet, he said. However "there is a program for their utilization, and foreign specialists are taking part in its implementation," IF's interviewee said.

According to the expert, Greenpeace's declaration that "these submarines can sink at their moorings" is simply ridiculous. The written-off submarines retain their crews, who continue to service the nuclear reactors and ensure viability for their vessels till the time, when the reactors are removed and the hulls are dismantled in dry docks.

The opinion of Russian naval officials as to the "authenticity" of the information used by Greenpeace "fully coincides with the viewpoint of our colleagues in the United States," he added.

#### **Conference Considers Options for Dealing With Komsomolets**

*PM0903135193 Moscow ROSSIYSKAYA GAZETA  
in Russian 6 Mar 93 Single Edition p 9*

[Report by Aleksandr Mozgovoy: "Will Komsomolets Remain at the Bottom?"]

[Text] The press regularly discusses the question of raising the nuclear submarine Komsomolets, which sank in the Sea of Norway in April 1989. But there is still no clarity. How do our departments actually intend to resolve this problem? [Signed] A. Korin, Rostov-na-Donu.

A special conference devoted to the problem of the Komsomolets was held recently in the Committee for the defense sectors of industry's main ship building industry administration. Taking part were specialists from the Navy, the "Rubin" marine technology central design bureau, which designed the nuclear submarine and elaborated plans for raising it, and representatives of the Russian Federation Ministry of Ecology and Academy of

Sciences, and also of the recently created committee for special underwater operations. Here is what Captain First Rank Valentin Lyashenko, chief of the Russian Navy Nuclear Submarine Operation Department, told your ROSSIYSKAYA GAZETA correspondent about the results of this meeting:

"First of all I shall stress that surveys at the place where the KOMSOMOLETS went down show that radiation levels in the water and soil around the sunken submarine do not exceed background levels. The nuclear power plant presents no threat to the environment for the foreseeable future. On the other hand the state of the nuclear submarine's hull is causing serious concern: The forward torpedo tube doors are open and there is a diagonal crack in the ship's shell on the port side in the region of the first and second compartments and there is also a long longitudinal crack. Therefore, raising the Komsomolets is becoming an extraordinarily risky operation, since the hull could break, which would probably result in very grave consequences for the ecology of vast areas of water. That is why specialists of various departments and sectors now regard raising the ship as unwise.

"The conference examined the question of ways of hermetically sealing off the forward compartments of the submarine. Seven options have been suggested. They will all be submitted for examination by the government. After additional studies we will succeed in adopting the most suitable option."

*[Mozgovoy] Valentin Andreyevich, it is known that the state of the two torpedoes with nuclear warheads containing plutonium are of special concern. As a result of corrosion processes their casings could be destroyed, which could lead to the leakage of very dangerous radioactive material. Was the question of extracting and raising the torpedoes discussed?*

[Lyashenko] There are proposals on this score. But so far in our view there are no technologies whose reliability is guaranteed. The forthcoming expeditions to the place where the Komsomolets sank should determine reliably the degree of danger emanating from these torpedoes. Meanwhile options for disposing of the nuclear warheads are being elaborated and analyzed. [Lyashenko ends]

"There should be no place in this question for emotions or anyone's ambitions or for what anyone wants or does not want," said Academician Igor Spasskiy, general designer of the "Rubin" central design bureau. "The problem should be resolved on the basis of research, accumulated experience, and strict scientific analysis. We are cooperating closely with foreign organizations, including the Dutch consortium for deepwater operations, which has rich practical experience working at great depths. Within a year I think we will succeed in finding the right solution."

The committee for special underwater operations headed by Captain First Rank Tengiz Borisov will coordinate efforts to untangle problems connected with the Komsomolets and finance the projects.

### Kola Peninsula Facing Threat of Ecological Disaster

LD0103112693 Moscow ITAR-TASS in English  
1057 GMT 1 Mar 93

[By ITAR-TASS correspondent Vasiliy Belousov]

[Text] Murmansk, March 1 (TASS)—The threat of an ecological catastrophe is becoming a reality in the Kola Peninsula. According to the information of local environmental protection authorities, a complete degradation of ecological systems took place in suburban areas of the cities of Nickel and Zapolyarnyy on a total area of 8,000 hectares. Vegetation was destroyed completely around those cities, as well as Monchegorsk, on a total area of 130,000 hectares. In that region the content in water reservoirs of mineral and organic substances, which are harmful to people's health, exceeds the permissible level by hundreds of times.

The situation with the dumping of radioactive waste, left as a result of the functioning of a nuclear power plant, nuclear-powered vessels of the Murmansk shipping line and submarines of the Northern Fleet is a source of even greater concern for residents of the Kola Peninsula. The existing storage facilities are either filled to overflowing or are close to it. Dozens of nuclear-powered submarines which have served their term and are now laid up at a harbour near Murmansk are another source of anxiety for residents of the northern region.

Local authorities cannot resolve ecological problems by their own efforts. This is why the session of the regional council, held last January, approved proposals on working out a state programme of nuclear and radiation safety on the Kola Peninsula. The resolution was sent to the Russian parliament and government, but no response came, a spokesman for the regional council told ITAR-TASS.

The peace and environmental protection organisations of the region, which do not want to reconcile themselves to the growing threat to the health and lives of local residents, appealed today to President Yeltsin, calling his attention to the critical ecological situation in the northern area. Peace champions and local ecologists decided as well to appeal to the public of the neighbouring Scandinavian countries to support them in their struggle against the threat of an ecological disaster on the Kola Peninsula, which is becoming more and more real and which is sure to affect the border areas of Norway, Sweden and Finland.

### Underground Nuclear AES Planned for Kaliningrad

PM2602162393 Moscow Russian Television Network  
in Russian 1100 GMT 24 Feb 93

[From the "Vesti" newscast: Video report from Kaliningrad by G. Sabin and A. Troshin, identified by caption]

[Text] [Video shows announcer followed by control panel] [Announcer] Specialists from St. Petersburg's Maritime Machine Building Bureau have come up with a concept for resolving the energy crisis in an oblast that receives 90 percent of its electricity from Lithuania, although their idea has not of course failed to encounter some obstacles straightaway. Our correspondent reports from Kaliningrad.

[Video shows control panel] [Sablin] Nuclear specialists from the banks of the Neva are suggesting neither more nor less than the construction of an underground nuclear power station beneath Kaliningrad.

[M. Matochkin, oblast administration head, identified by caption] I am not saying officially that the administration has not discussed the question of constructing an underground nuclear power station, but from the human, emotional viewpoint and also from the environmental viewpoint, we are firmly opposed to the construction of any nuclear power station in Kaliningrad Oblast, this small area, and will categorically object to it.

[Sablin] Without doubt what has been said, [video shows letter from Kaliningrad city soviet chairman to general designer of St. Petersburg-based "Malakhit" Maritime Machine Building Bureau] I would point out that the authors of this latest "project of the century" were not born yesterday either. They have already managed to win support among the city administration. Nonetheless there are clear signs of poorly concealed subterfuge behind the sound arguments put forward by authoritative scientists. The point is that, having found itself in a difficult financial position, the leadership of "Malakhit" has decided to sell several shipborne nuclear installations in this unique manner. One cannot help but recall the famous saying: "Apres nous le deluge." [111721] [video shows electricity control panels, oblast administration head addressing meeting, ships in harbor]

### **Far East Urged To Oppose Nuclear Power Development**

LD2602122593 Moscow ITAR-TASS in English  
0754 GMT 26 Feb 93

[By ITAR-TASS correspondent Anatoliy Vostokov]

[Text] Khabarovsk, February 26 (TASS)—The local committee of the public movement "Physicians for Nuclear-Free Zones" has urged residents of the Far East to oppose the construction of nuclear power stations in Khabarovsk and Primorye territories.

Both physicians and scientists shared concern and alarm of American environmentalist Denis Spekt, who addressed the meeting, and expressed resolve to press for proclaiming cities and villages of the region nuclear-free zones, for seeking out alternative sources of energy.

### **Yablokov Discloses USSR Nuclear Waste Dumped in Far Eastern Waters**

OW2702133493 Tokyo NHK General Television Network in Japanese 1000 GMT 27 Feb 93

[From the "NHK News" program]

[Text] In an exclusive interview with NHK, a Russian Government official investigating the disposal of radioactive nuclear waste at sea by the former Soviet Union stated that over the past 30 years waste has been dumped in ten locations in the Sea of Japan and other Far Eastern waters. The statement was made by Dr. Aleksey Yablokov, chairman of a special committee established by the Russian Government to investigate the dumping of radioactive nuclear waste at sea by the former Soviet Government. Dr. Yablokov said that since 1966, nuclear waste was dumped in a total of ten locations in the Sea of Japan, the Sea of Okhotsk, and the sea off the Kamchatka Peninsula. [Begin recording] [Yablokov speaks in Russian with Japanese subtitles; the following is from the Japanese] The former Soviet Union decided to dump radioactive nuclear waste in Far Eastern waters in the 1960's. The waste was dumped into the sea off the Kamchatka Peninsula, the Sea of Japan, and the Sea of Okhotsk. [end recording]

Dr. Yablokov said two empty nuclear reactors and two small boats holding containers of solid nuclear waste were dumped into Far Eastern waters. He added that radioactive leakage occurred from nuclear waste dumped in Avacha Bay on the Kamchatka Peninsula. Dr. Yablokov plans to submit a report to President Boris Yeltsin in which he will propose immediate suspension of the disposal of radioactive nuclear waste, implementation of radiation measurement of waters where waste was dumped, salvage of radioactive nuclear waste with high radiation, and construction of dumps on land.

### **Conflict Over Energy Sector in Krasnoyarsk Continues**

PM0803104993 Moscow IZVESTIYA in Russian  
3 Mar 93 First Edition p 2

[Aleksey Tarasov report: "Energy Scandal Between Center and Siberia Brewing"]

[Text] V. Zubov, acting head of the Kray Administration, has stated: "We are forced to take practical actions."

In issue 30 IZVESTIYA wrote about the essence, causes, and prospects of the "energy" confrontation between some leaders of power industry enterprises in Krasnoyarsk Kray and the "YeES Rossi" ["Russian Unified Energy System"] Russian Joint-Stock Company. Let us recall that by edict of the president of Russia, all the most highly profitable power installations in the Krasnoyarsk region—its hydroelectric power stations and state regional electric power stations—were supposed to be transferred to the ownership of the "YeES Rossi"

joint-stock company. The Siberians disagreed and suggested their own approach to the flotation of the region's energy complex, aiming to preserve it as a single entity and to distribute shares between the Federation and Kray levels on a basis of parity.

Several important events have occurred since the newspaper article.

V. Zubov, acting head of the Kray Administration, and V. Novikov, chairman of the Kray Soviet of People's Deputies, met with V. Chernomyrdin. The premier, according to Zubov, agreed with the Krasnoyarsk approach toward solving the problem. However, a delegation from the "YeES Rossii" joint-stock company led by the company's vice president immediately went to Krasnoyarsk. The talks were unsuccessful because the sides would not budge from their positions.

There are at least two questions arising from this. Does the leadership of the Ministry of Fuel and Energy and the "YeES Rossii" joint-stock company know that their position is at variance with the premier's, as stated at the meeting with the Krasnoyarsk Kray leaders, and is V. Chernomyrdin aware of this? If so, why can the government not work out a single approach to the settlement of the conflict?

Meanwhile, several power stations in the Krasnoyarsk region, including the Krasnoyarsk hydroelectric power station, have decided to join "YeES Rossii." In that case the flotation of the Kray's energy system as a single complex, which is what the local authorities are urging, will clearly not happen. What might the local authorities' response be?

When V. Kolmogorov, director of the Krasnoyarsk hydroelectric power station, announced at the acting head of the Kray Administration's meeting with commodity producers and leaders of power industry installations that the enterprise's council favored joining "YeES Rossii," the reaction to his statement was very sharp. "Then freeze the Yenisey River or pay for the ecological damage!"

The practice of filing law suits for ecological damage inflicted on the Krasnoyarsk people by the activity of the industrial giants is a familiar one. Bills running into billions for environmental pollution have been presented to the mining and chemical combine in Krasnoyarsk-26, a producer of weapons-grade plutonium, and the Norilsk mining and metallurgical combine. Thus another suit—against the Krasnoyarsk hydroelectric power station—is highly likely.

By all accounts, one way to resist the appetites of the "YeES Rossii" joint-stock company will be to introduce special payments to the local budget for the use of natural resources by enterprises which are considering switching to the joint-stock company. There could also be material compensation for flooding fertile plowland, for the ruined taiga, and so forth.

Here is what Yu. Semenyuk, deputy general director of the "Krasnoyarskenergo" Production Association, says: "The 'YeES Rossii' joint-stock company is meeting all the costs of the enterprises and all claims in order to seduce the enterprises. Taking advantage of the situation, of course, the Krasnoyarsk hydroelectric power station has raised pay to such a level that it is now twice the average at 'Krasnoyarskenergo.' As a result the money for it will be taken from the electricity consumers. The Kray can now demand the raising of all payments for ecological or any other harm caused by the energy industry. The money will be found but again it will come from the consumers, from the population, because charges will immediately rise."

So the Krasnoyarsk people, of course, may sue the Krasnoyarsk hydroelectric power station, its designers, the Ministry of Fuel and Energy, or the "YeES Rossii" joint-stock company for the failure of the Yenisey to freeze in winter and for the fog impregnated with industrial discharges which is suffocating the city of a million people. Clearly, the city may be paid. The only problem is that the money will come from the pockets of its own residents.

### Survey Uncovers Radiation Spots in Ryazan

PM0503143193 Moscow ROSSIYSKAYA GAZETA  
in Russian 2 Mar 93 First Edition p 2

[Report by Taytana Novikova: "No one Frightened by Quiet Catastrophe"]

[Text] Ryazan—Dangerous radiation spots on Ryazan's map were discovered during a selective radiation survey carried out in the city last year. The nature and intensiveness of the background make us believe we are dealing with a "combination" of the consequences of the Chernobyl accident and our own "quite catastrophe"—the plant garbage heaps. Ryazan Vice Mayor Ryazani Merkulov has signed a special directive on the subject. All the city's enterprises must carry out an inventory of all existing radioactive elements [as published] and with the aid of geological prospecting instruments carry out a radiation survey over their territory. Although this information was announced for the first time at the oblast center, it caused no panic or even surprise. With little effort you can understand why: Many Ryazan people work at these enterprises.

### Leukemia Rate Increases in Urals Contaminated Zone

PM0903124793 Moscow Russian Television in Russian  
1100 GMT 5 Mar 93

[From the "Vesti" newscast: Video report read by announcer]

[Text] [video opens with snow-covered landscape] In 1957 there was an accident at the "Mayak" Production Association and as a result parts of Kurgan, Chelyabinsk,

and Sverdlovsk oblasts suffered radioactive contamination. The area affected included Kamensk-Uralskiy, a major industrial city. The total radioactive discharge amounted to more than 1 billion curies or the equivalent of 20 Chernobyls. For many long years people did not even know about this catastrophe. Only some of the worst affected villages were evacuated. For 35 years hundreds of thousands of people have been living under a terrible radiation threat and on contaminated land. In addition, that have a poor supply of food and the presence in Kamensk-Uralskiy of hazardous production units. Cancer-related deaths here are an inevitable phenomenon in virtually every village. Recently the incidence of leukemia has increased and along with it the death rate among young children. From time to time Kamensk-Uralskiy receives another discharge from the Beloyarsk Nuclear Power Station. [video shows distant view of town with yellow smoke hanging over it, street scenes, scenes of factories shrouded in smoke, kindergarten, map, more smoking chimneys]

### Questions on Safety at Kursk Nuclear Power Station

PM0803102593 Moscow KOMSOMOLSKAYA  
PRAVDA in Russian 6 Mar 93 p 1

[Report by N. Yefimovich: "Latest Accident at Kursk Nuclear Electric Power Station"]

[Text] Kursk—The fourth unit has been halted at the Kursk nuclear power station. The emergency protection system went into operation. There was a short in the electrical generator supplying the turbine equipment.

The power station press center reported that the nuclear safety limits were not violated and that on the international scale the accident is zero-rated. The radiation situation is normal.

This is the second emergency at the nuclear electric power station in slightly over two months. At the New Year the third unit was halted because of the leakage of fumes from a pipeline. No increase in radiation was observed. The incident was also assessed as safe...

But there have nonetheless been rather a lot of these harmless accidents for one nuclear power station in such a brief period of time. One cannot help asking: Is this an extraordinary lack of professionalism on the part of the staffers or are reactors of the Chernobyl type still making their presence felt?

### State of Tatarstan Ecology Examined

934C0619B Moscow DELOVAYA ZHIZN in Russian  
No 11-12, Oct-Nov 92 pp 70-74

[Article by Aleksey Kolesnik, chairman of the Republic of Tatarstan Supreme Soviet Permanent Commission on Ecology and Rational Use of Natural Resources]

[Text] In a single article it is impossible to cover the entire system of relationships which characterize the environmental condition of our state. Ecology is the systematic perception of economic activity, social policy, state structure and other factors which support the life of an organized society. We very much hope that the following will give readers a better understanding of the environmental situation in the Republic of Tatarstan.

### Waste Water Treatment

According to estimates from various experts, it will require between R2.0 billion and R6.0 billion (in 1990 prices) over the next five years to bring about lasting improvement in the state of the environment in oil-producing regions. That does not include funds necessary to improve oil production technology. There are many problems. However, we can look to the near future with optimism. That is because M. G. Galeev, general director of Tatneft Production Association, and his team have set a course toward solving the region's environmental problems and have not deviated from that course.

On the other hand, there are no grounds for optimism based on the behavior of enterprises in the agro-industrial complex. They discharge 5.8 million cubic meters of polluted waste water into the republic's surface water each year, of which 4.0 million cubic meters are discharged with no treatment whatsoever. Of a total of 126 livestock farms, only 33 have treatment facilities, a majority of which operate inefficiently. The overwhelming majority of summer camps are located in protected zones around rivers and lakes. The result is water pollution by bacteria and organic substances.

The municipal systems of the republic's cities treat over 270 million cubic meters of waste water, or 734,000 cubic meter per day. Over 98 percent of this waste water undergoes biological treatment. Slow construction and renovation of cities' treatment facilities has forced many of them to operate in an overloaded condition and at a low level of efficiency. Another problem for municipal treatment facilities is that industrial waste water is discharged into sewage systems, totalling 30-40 percent of their volume. This has an extremely negative effect on the effectiveness of treatment facilities.

However, the government's opinion is that the problem can be resolved, and primarily by economic methods. A legislative act is now being drafted which will make it more attractive to build local treatment plants than it is to pay cities' municipal systems to discharge industrial waste water.

Another way in which industrial waste water volume entering municipal treatment plants can be reduced has been proposed by the Ekochit small enterprise. The proposal is based on existing technology for waste-free and discharge-free removal of mineral contamination from water. The technology is based on foreign particle exchange methods. These methods ensure thorough water purification, and the minerals extracted can be

used to produce certain products. The technology's creators claim that it could be used by a majority of the republic's industries.

It is impossible to imagine solutions to environmental protection problems without monitoring of the condition of water, air and other components of the environment. Currently surface water monitoring is being conducted at 51 sites on 10 bodies of water. The work is being done by hydrometeorologists and specialists from the Tatarstan Water and Sewer Administration, the Middle Volga Watershed Administration, the Tatarstan State Environmental Committee and about 40 government laboratories. Thus far the data obtained by those laboratories has been dispersed and of little use in terms of ongoing water resource management. However, it is hoped that this problem will be resolved within the next few years. The reason for optimism is the fact that environmental monitoring is now being supervised by leading scientists such as Professor V. Z. Latypova, who represents Kazan University. This diminutive woman has set aside her basic research to tackle the problem of setting up regular lab monitoring of the environment, train laboratory personnel, create quick analysis methods and much more, without which environmental monitoring in our republic would be impossible.

### The Air

The problem in this area is ongoing cutbacks in capital investment for measures to reduce emissions into the atmosphere. Whereas previously those problems were being solved with centrally-allocated funds, now enterprises are trying not to invest any money in equipment to remove pollutants from gases and the air. Suffice it to note that in 1992 Tatarstan's enterprises intend to spend less for such purposes than in 1991 by a factor of 4.5.

Yet not every enterprise is putting the problem of air pollution on the back burner.

Since the 1930's freon has been discharged into the atmosphere by the tonne. Though its effect on the ozone layer is under debate, it is nonetheless acknowledged by a majority of scientists. On the basis of recommendations from the scientific community the Montreal Convention provides for a reduction in the use of freon by one-half by 1995 and complete elimination of its use by the year 2000.

Efforts are also being made to solve this problem in Tatarstan. At the Khiton Plant one-fourth of all aerosol products being manufactured no longer contain freon. The process of replacing freon with a different propellant has proved not to be quite as simple as originally believed. However, the enterprise's specialists have accomplished their goal. Today a new propellant is being used in the manufacture of air fresheners and Neofos insecticide. Preparations are being made to begin manufacturing a new line of hair sprays. Deodorants are being developed. Plus, Khiton has also managed to get the Minnibayevskiy Gas Refinery to take part in the

program. As soon as its chemists begin producing industrial quantities of the new propellant, Khiton will accelerate replacement of freon in its new product formulas, and that will bring the plant closer to meeting the terms of the Montreal Convention banning the use of freon.

### Forests

The first general survey of Kazan Guberniya in the late 18th century provides evidence that at that time forests covered approximately 50 percent of our republic. Going farther back in history, M. Khudyakov's book "Ocherki istorii Kazanskogo khanstva" [Essays on the History of the Kazan Khanate] indicates that in the 15th century forest cover here was approximately 80 percent. We find that over a period of 350 years our ancestors, beginning in the 15th century, deforested 19,000 square kilometers, yet our more recent ancestors have deforested 32,900 square kilometers in the past 140 years, leaving our descendants only 1,114,400 hectares of forest. Think about those figures and feel sorry for us, and even more so for our children and their descendants... For they will have to solve a very difficult problem: how to restore their forests and raise the level of forestation to the environmentally essential 25 percent of the republic's total area. Today only 38 percent of the republic's territory meets or is close to that standard.

The task is extremely complex, because reforestation is moving extremely slowly, something on the order of 0.1 percent of our territory. If we consider the difference between existing and required forest cover, at this rate efforts will have to continue for 70 years, and if one takes into account the adaptability of seedlings (0.88) and the time to reach productive age (25-40 years) plus the opportunity of forest fires and grazing damage, then it would take 120 years.

Today forests have increasing recreational value due to their diminishing extent. In order to lessen the burden on forests the republic is establishing national parks. One such park is the Lower Kama National Park, which includes the famous Shishkin Pine Grove near the city of Yelabuga, a forest depicted in ten of the artist's great canvases. Maintenance of these parks will be funded with budgeted money to support scientific research in those areas.

It is impossible to conduct normal reforestation without thoughtful development of hunting. Due to insufficient natural regulation and the rise in urbanization the number of moose and wild boar is increasing. Approximately 30 percent of all destruction of flora in the forests is due to moose trampling. Great damages are caused to forests by wild boar, which root up oak seedlings. Garbage thrown out by dacha owners helps increase the wild boar population. These animals have become a problem in the Rafskiy Preserve, the only preserve in the republic. Therefore proper supervision and development of hunting in the republic will help preserve forests.

In turn, preservation of forests will help preserve the forest's riches, which in addition to timber include

mushrooms (white mushrooms, pepper mushrooms, chanterelles, aspen mushrooms, birch mushrooms and *boroviki*), medicinal herbs (lily-of-the-valley, St. John's wort, valerian, iris, gentian, hepatica, adonis, bellwort, lunik and many others), berries, and so on. Tatarstan's forest pharmacy includes over 30 types of plants which are suitable for harvesting in industrial quantities.

#### Animals

Once again citing M. Khudyakov's book, "in that land the fields were great and green with an abundance of wonderful fruits... and all manner of diverse animals inhabited that land: it was the home of rare marten and squirrels and other animals that could be eaten every day, and from which clothes were made, and there were almost as many sables, and many bears; I know of no place under the sun where there were more animals," reported Prince A. M. Kurbksiy.

Today the situation is such that there are no sables to be seen, but the marten and squirrels are still here. There are in Tatarstan 72 species of mammals, 289 species of bird, eight reptile species, 11 amphibians and 52 species of fish. Rare species comprise 42 percent of the mammals, 31 percent of the birds, 50 percent of the reptiles and 20 percent of the fish. Threatened with extinction are the Russian muskrat, the European mink, the flying squirrel, the wolverine, the falcon, the *sansan* [fish], the beluga sturgeon, the Russian sturgeon, the *taymen* salmon and a number of others. There are 18 species of bird and 18 species of mammal that are hunted. Among them are black grouse, hazel grouse, woodcock, wild hare, moose, wild boar, muskrat, raccoon-faced dog, fox, several types of marten, etc. In 1990-91 licensed hunters bagged approximately 2,000 moose, approximately 1,889 wild boar and, for the first time, 120 beaver. A total of 7,100 other animals were killed.

#### Fishing

Commercial fishing is carried on in two reservoirs: the Kuybyshev (576,000 hectares) and the Nizhnekamsk (100,000 hectares). Of their total area 50.7 percent (292,000 hectares) and 70.0 percent (70,000 hectares) lie inside our republic. The commercial catch is 9,200 kilograms per hectare.

Commercial species include bream, perch, pike and sterlet. The number of these fish that may be caught is restricted. Each year up to 3,000 tonnes of fish are caught. Any list of waters in the republic suitable for fish farming would be incomplete without fish farms' breeding tanks, totalling 800 hectares, plus the 4,000 hectares in kolkhoz and sovkhoz ponds. Those ponds produce 515 tonnes of carp. The total combined catch and fish farm production comes to an annual total of 5,512 tonnes, or 1.6 kilograms per resident, which is an extremely small amount. Therefore we feel that artificial expansion of fish resources should be one of our goals. There are plans to release 62.3 million fry into various bodies of water annually, including 38.0 million bream,

12.3 million carp, 5.2 million pike perch, 3.6 million *rapus*, 3.6 million sterlet and other sturgeon species, and 600,000 *nelmy* [type of whitefish]. However, that will require major fish farm construction. The government has allocated money for that purpose, and those funds are presently being utilized.

#### Industrial and Household Wastes

The republic's capital, Kazan (population 1.1 million), alone creates more than 350,000 tonnes of solid household wastes annually, of which over one-half are wastes containing substantial amounts of valuable substances (87.5 percent) that could be recycled. Today only 60 percent of paper and food wastes are reutilized, only 11 percent of glass and construction wastes are recycled, and only 5 percent of wastes containing mercury are recovered. According to preliminary data approximately one million used fluorescent bulbs are thrown away each year. Overall, approximately 30 percent of household wastes are recycled, 20 percent are burned in stoves and heaters not suitable for such purposes, and 40 percent are hauled away to dumps and landfills.

According to figures from the Academy of Municipal Services imeni N. D. Pamfilov, Kazan's household wastes contain 20-40 percent used paper, 3-5 percent ferrous and non-ferrous metals, 4-6 percent textiles, 1-2 percent plastics, 3-6 percent glass, 1-2 percent rubber and 34-40 percent food scraps.

A serious solid waste problem exists in the cities of Naberezhnye Chelny (population 500,000), Nizhnekamsk (200,000), Mendeleyevsk and Yelabuga (60,000).

Wastes total approximately eight million tonnes annually, of which industrial wastes comprise 6.8 million tonnes, including 2.4 million tonnes of toxic wastes. There are no sites for disposal of industrial wastes. Dumps are overflowing.

Samosyrovo is one particularly infamous dump. The site covers 22 hectares, though it was planned for a size of eight hectares in 1960. Since that time 14 hectares of farmland and land belonging to the State Forestry Administration have simply been expropriated. The dump is spreading like a terrible and contagious stain on the body of the land. The government is trying to solve the problem. However, in addition to the high cost of technology and equipment to process garbage, a solution to the problem is also being blocked by local residents, who do not want a garbage processing plant in their rayon. Despite all these obstacles the government's efforts should prove successful, and there is every reason to believe that they will.

A particular problem is what to do with pesticides that are no longer usable or have been banned. Preliminary estimates indicate that the republic's agricultural regions have accumulated approximately 400 tonnes of these poisonous substances. Among them are highly toxic pesticides like granozan, DDT, TMTD and others. In

order to solve this problem the government of Tatarstan has entered into negotiations with a number of companies and organizations which have the technology and equipment to destroy these toxic chemicals.

Currently one-fifth of all metal used in metalworking is thrown away, 50.7 percent of that amount as shavings. The percentage of dormant scrap out of total ferrous metal wastes is 7.6 percent. Of all the non-ferrous metal wastes created in this republic, aluminum, tin, copper, lead and bronze account for 91.4 percent. Waste amounts of other non-ferrous metals are insignificant.

An example in the recycling of commercial metal scrap is being set by the Vakuummash Scientific Production Association, where waste metal is being used to manufacture 28 different products, and the total amount of metal conserved is around 68 tonnes annually.

The chemical giants located in the republic produce not only profits, but also serious concern over their environmental pollution. However, it should also be noted that our republic's enterprises have little money or time to spend on the search for technologies that would permit them to utilize waste products created in the process of chemical and petrochemical synthesis.

Wastes from acetone and phenol production are already being utilized to produce M-VRS-3 brand resin and a veterinary disinfectant (at the Orgsintez Production Association), and pipe wastes in the form of resinous pipes for oil production are being used by the Nizhnekamskneftekhim Production Association to produce plasticizers and anti-aging agents, which are in turn used by the Kazanrezinotekhnika Production Association. A water-based concentrate containing cyclohexane and ethyl acetate is being used by the Tasma Production Association in its manufacturing process.

However, no use has yet been found for chlorine barium wastes totalling up to 9,000 tonnes annually (from the Chemical Plant imeni Karpov in Mendleyevsk), or for biological wastes from the Tatkhimfarmpreparaty Production Association. The resources of resin-containing wastes at Nizhnekamskneftekhim Production Association total 11,900 tonnes annually.

Processing of used tires, of which there are approximately 7,600 tonnes in the republic, could yield around 5,400 tonnes of resin, approximately 1,000 tonnes of textile fibers and over 250 tonnes of metal for the republic.

There has also been positive experience with the use of polymer materials. For instance, at the Polimerfoto Plant in Kazan the Tasma Collective Production Association produces more than 10 items out of waste materials. These include machine grease, bone meal for animal feed, precipitate, hydrolyzed protein, and phosphate sludge meal. Old polystyrene is used to manufacture tape holders, cassette storage boxes and decorative stands for household appliances. "Avtoantikor" anti-corrosive protectant is now being made out of scrap

technical photographic films, and scrap magnetic tape made out of laysan is being used in the manufacture of adhesive wallpaper and sticky tape for window weather-proofing strips.

Processing of over 36.3 million square meters of fabric produces wastes in the form of small rags, unusable ends with textile flaws, and pattern scraps.

The annual volume of rags is 70,000-80,000 square meters of fabric and of pattern scraps—875-895 tonnes, of which 37-40 percent of total volume is used at the same facility and 54-58 percent are collected by Vtorsyrye collection organizations.

According to preliminary estimates textile waste material resources total approximately 18,600 tonnes annually.

#### The Economic Aspects of Ecology

The lack of the centralized financing that was formerly provided by ministries and agencies is now causing many enterprises to curtail their environmental protection programs. In order to prevent this the Government of Tatarstan is now in its second year of improving its system of payments for environmental pollution by emissions and discharges. The system of payments is based on an environmental mechanism, the essence of which is this: "You pollute—you pay. Reduce your discharges (or emissions)—and we pay you." The system makes it advantageous for enterprises to pay attention to ecology. An enterprise pays money for its emissions or discharges, 80 percent of which money stays in a special bank account all year, under a subaccount for the environmental funds accumulated by each enterprise. Over the course of the year the enterprise may propose to the local soviet ispolkom a contract for reduction of its emissions or discharges. That contract will be financed out of the funds in the enterprise's special account, funds the enterprise cannot access without a contract. Depending on the effectiveness of the measures proposed by the enterprise to reduce its discharges or emissions, it is possible to obtain various types of financing, from a non-repayable loan to a loan at 10 percent interest.

If in the course of the year the enterprise does not use the funds in its environmental account, they go into the local soviet's environmental fund, where they will be used to pay for compensation measures: children's summer trips to health resorts or compensation payments for the treatment of chronic illnesses and other illnesses resulting from negative environmental conditions. The funds might also be spent for preventive examinations of persons living in areas subjected to the effects of the enterprise in question, or to improve health care facilities in that region.

Another portion of the funds, up to 20 percent of the total, excluding fines, is to be centralized in a republic fund and used to deal with matters of significance to the entire republic: promotional work, science, personnel training and retraining, and other things.

There is one more, and perhaps the most important, element in the rational management of the republic, and that should be a mechanism for paying for natural resource use. Currently under consideration is draft legislation entitled "On Payment for Land" and draft government decrees entitled "On General Licensing of Natural Resource Use" and "On Payment for Underground Resources and Other Natural Resources." Funds received from payments for resources will be concentrated in the budget, which in 1992 contains for the first time an item titled "ecology fund," and payments for environmental pollution will go into non-budgetary accounts in the government's environmental fund. Those funds will be used primarily to perform practical environmental tasks: treatment plant construction, riverbank reinforcement, establishment of a complex to manufacture biological means of plant protection, and improvement of land resources (soil treatment). Financing of these measures has already begun, and we hope that they will become a point of departure for real improvement in the environmental situation in Tatarstan.

#### The Republic's Primary Resource

Kazan, and with it Tatarstan, is a recognized center of science and education. We have been known to the world for this for centuries. Kazan University, one of Russia's oldest, has been located here for approximately 200 years. A Tatarstan Academy of Sciences has now been established. Therefore the republic's main environmental resource is not oil, it is its scientific and engineering personnel. A simple listing will suffice to illustrate our potential capabilities for solving any environmental problems. Judge for yourself—general environmental issues are being studied by academicians I. A. Tarchevskiy (biochemistry), A. M. Mazgarov (chemistry and chemical technology), I. G. Yusupov and V. P. Tronov (earth sciences), A. Z. Ravilov (virology and toxicology), A. Yu. Dautov (power engineering), Professor V. A. Boyko (Tatarstan Academy of Sciences, zoology), A. M. Trofimov (Kazan State University, geomorphology and evolutionary geography), Yu. P. Perevedentsev (Kazan State University, meteorology, climatology and aerometeorology), A. A. Ozol and U. G. Distanov (All-Russian Scientific Research Institute for the Geology of Non-Ore Minerals, sorbents for improvement of the environmental condition of land), S. V. Fridland (Kazan Chemical Technology Institute), V. Z. Latypova (Kazan State University) and G. P. Sharinin (Kazan Chemical Research Institute)—who is studying the whole chemistry of the environment and methods for researching it—as well as Sh. S. Karatay (GIDUV, environmental safety), M. M. Gimadeyev (KGMI,

municipal sanitation), and many other highly-qualified experts who are working on environmental problems in their specific fields.

Today our problems in the field of environmental sciences, as in other areas of knowledge, lie with the inadequate supply of scientific equipment and automated measuring devices. With the current economic decline it is become more and more difficult to manufacture non-standard scientific equipment—it is becoming prohibitively expensive. Nevertheless we hope that these problems are temporary. The non-budgetary fund created by the government should help science perform environmental tasks.

I would like to conclude this article with an explanation of the position taken by Tatarstan's ecologists on the question of its status.

Today Tatarstan's political position and its efforts to achieve independence often evoke puzzlement, and sometimes anger. However, that position is not merely the whim of "dyed-in-the-wool partocrats clinging to power," as some politicians claim, and it is not arbitrary—it is an objective necessity, without which any attempts to solve very complex economic, social and environmental problems will remain but good intentions. We proceed upon the assumption that each region is unique, especially one that contains people organized into a state, with their own way of life developed over centuries. Regional and geographical uniqueness is augmented by industrial uniqueness born of socialist monopolism. That, or something like it, is the opinion of the 64 percent of Tatarstan's citizens who on 22 March 1992 went to the polls and defined the status of our republic as a sovereign state and a subject of international law. Because to them independence means responsibility, responsibility means action, action means life, and action in their own interests means a good life.

Ever broader segments of the republic's population are beginning to agree that thrifty people create thrifty lands, just as rich states are made up of rich citizens. Patriotism emerges and thrives where there is the desire to reshape one's own home, street and city, and only then the whole Universe. If everyone would do precisely that, then and only then will the Universe be reshaped. We saw the opposite in our former state, the USSR. Realizing that, we turn more and more often to ecologists' sound rule: think globally, act locally. We are increasingly mastering things that have been developed by the world community in environmental relations and therefore we want independence so that we can shape our own lives in harmony with the laws of nature and in a unified world. We welcome all who want to create something, all those who remember that the world is one. By solving together our environmental problems we will also be solving our own problems. We welcome all who bring with them to our land interethnic harmony and peace, all those who want the land of Tatarstan to flourish.

## WESTERN REGION

**Belarus: New Security Institute To Implement U.S. Nuclear Project**

WS2602145093 Minsk BELINFORM in Russian  
1124 GMT 25 Feb 93

[Text] Belarus has more than enough directions for further development. Which of them should be chosen or given preference? A Belarusian Institute of Development and Security Prospects which has been recently registered by the Ministry of Justice is going to give a due response. According to its organizers, the new institute does not confine itself only to this task.

"We must not only help our state officials choose a way for further development but we must also make it more secure," said Vladimir Baryshevskiy, leader of the new non-state formation and director of the Nuclear Problem Institute. "To this end, we must take into account a number of political and economic aspects. It is necessary to ensure control over the export of dangerous materials and promote Belarus' movement along its chosen path to neutrality."

Allies who have united to defend Belarus' security interests began their activities with working out a package of definite proposals to implement the law on the reduction of the Soviet nuclear threat prepared by U.S. Senators Sam Nunn and Richard Lugar.

**Belarus: International Conference on Chernobyl Health Issues**

WS0303135593 Minsk Television Network  
in Belarusian 2 Mar 93

[Text] An international conference devoted to the problems of health protection for people who have suffered from Chernobyl is being held in Minsk. Scientists from nine countries, including representatives of the Commission of the European Community, are participating. The results of practical medical investigations are being discussed by experts within seven specialized sections. During the break, our correspondent had an interview with Ivan Albinovich Kenik, deputy chairman of the Presidium of the Belarusian Cabinet of Ministers, chairman of the State Committee for Chernobyl Issues.

[Begin recording] [Correspondent] Are the issues of decontamination pressing for Belarus these days? What will be the practical results of this conference?

[Kenik] Seventy percent of all the radionuclides which had been discharged from the Chernobyl nuclear station remained on Belarusian territory. Two hundred sixty thousand hectares of ploughed land are contaminated and out of use. These lands were the best, the most fertile lands in southern Belarus. For Belarus, all the work that is being carried out by the scientists from Russia, Ukraine, and the European Community, is vitally important. I mean the rehabilitation of the contaminated territories, the revival of our hope for the future, and the

return of our economic potential. I am sure that the scientific research will allow us to introduce some changes into our work. I mean some practical recommendations for our workers on the methods of decontamination of fields and buildings, and on the economic feasibility or unfeasibility of this work. Still, we do not have the answers to these questions. [end recording]

**Belarus: Supreme Soviet Deputy on Chernobyl Research, Treatment Costs**

WS0503151593 Minsk Radio Minsk Network  
in Belarusian 0605 GMT 4 Mar 93

[Interview with Supreme Soviet Deputy Anatoly Volkov, vice president of the Belarusian-Norwegian-Scandinavian Association from the "Against Trouble—Together" program, by Pavel Borin]

[Excerpts] [Volkov] The association would not exist without the subject of the studies. In 1986, when I saw the tragedy of people running away in terrible haste and leaving everything behind; I realized that we had to prepare testing areas for performing research on living human beings. We had to examine the influence of the altered environment, the kind that did not exist anywhere else on Earth. Later, medical institutions chose different areas for their studies, but this activity lacked coordination. This is why they could not get reliable scientific results. At the same time, we have been preparing our test areas. We took a part of Konevskiy Rayon, Komarin—which is a large, populated area only 25 kilometers away from the reactor—Pinsk, and [name indistinct] in Mogilev Oblast. With detailed information on hand, we can expand the territory.

[Borin] How many test areas exist there now?

[Volkov] There are 22 test areas. People live and work there. They will always live there; nobody will ever evacuate them, because the exposure level was about one to five, maybe 10 curies. This is why we urgently need more information. What if we are mistaken? What if those people cannot be kept there at all? Scientists are holding very passionate debates. Some argue that these people should be left alone and not disturbed, because their psychological balance may be affected. Others argue that even the smallest doses of radiation are damaging to human health, and particularly to children. These are true test areas where the influence of radioactive isotopes on people is researched. It may seem immoral to keep people there for research. Why should we do it with people living there?

[Passage omitted on the activity of the association]

This year's budget is about 164 billion rubles [R]. This is a pitiful sum. The pockets of our administrators are empty; we cannot even finance the problems of Chernobyl. There have been ideas on presenting the case before the international courts. To attract international lawyers who could put everything in order. Who contaminated us? Who doomed us to suffering? We are late with

providing help for these people. We have medical information on thyroid gland cancer and leukemia—there has been a dramatic increase in children's diseases. There have been 63 cases of thyroid gland cancer during the past year. We have witnessed the revival of leukemia, popularly referred to as cancer of the blood. If we consider the cases of thyroid gland cancer and leukemia over the last six years, we will see that treatment abroad would cost R43 billion. The medical program would only cost R13 billion. Shortage of resources leads to heavy losses. Allow me to cite some figures. Only R174 million was earmarked last year in Belarus for all research on the Chernobyl-related problems. This amount includes agricultural research, the cost of equipment, etc. If we were to convert this sum into hard currency it will amount to about \$360,000. This is the annual wage of an outstanding professor abroad, believe me. This is the amount we have for all our science.

[Passage omitted on the need for more research]

#### **Ukraine: Shipbuilders Suggest Project for Chernobyl Sarcophagus**

*WS0403110193 Kiev KYYIVSKA PRAVDA in Ukrainian 18 Feb 93 p 1*

[Unattributed report from the "Ukraine and the World" column: "Although the Sarcophagus Is Not a Ship"]

[Text] Scientists of the Nikolayev Shipbuilding Institute have elaborated their own project for the transformation of Chernobyl nuclear power plant's "Shelter" into an ecologically safe system. They propose filling it with light, heat, and radiation resistant material—spherical concrete. The technology of its production has been developed by the shipbuilders.

#### **Ukraine: Report on Status of Nuclear Power Industry**

*934K04984 Moscow MOSKOVSKIYE NOVOSTI in Russian No 8, 21 Feb 93 p 7b*

[Article by Leonid Veksler: "The Closing of the Chernobyl AES Postponed, Meanwhile the Condition of the Sarcophagus Inspires Great Fear"]

[Text] After planned maintenance was carried out at the end of last year the first and third power units of the Chernobyl AES [nuclear electric power station] were again put into operation. The political decision to close the ChAES until late 1992 was thereby rescinded, although this issue has not been removed from the agenda. For now the government has envisioned the creation of a special construction-installation administration to shut down the plant and defined the sources of financing. At the demand of the republic's State Committee for Nuclear and Radiation Safety, the output of the first unit was limited to 70 percent of its nominal rate of 1,000 megawatts, which is a precautionary measure.

In 1992 Ukrainian AES's produced 73.8 billion kilowatt hours, or 29.4 percent of total production.

However, the moratorium on the introduction of new nuclear capacities continues to operate in the republic. For this reason three fully ready power units with VVER-1000's [water-moderated, water-cooled power reactors] at the Zaporozhye, Rovno, and Khmelnitskiy AES's which could produce 18-20 billion kilowatt hours a year and easily make up for the loss in output of the Chernobyl AES are standing idle. Specialists assert that no more than half a year is needed to launch the 6th unit of the Zaporozhye AES and under 18 months—to put the 2d unit of the Khmelnitskiy and the 4th unit of the Rovno AES's into operation.

Since it does not have its own AES fuel, Ukraine hopes to receive its share of income from Russia's sale of fissionable materials derived from the nuclear warheads which are to be destroyed (see BMN No 30, 1992). According to President L. Kravchuk, the Ukrainian side did not receive any compensation for the fissionable materials for handing over the nuclear tactical weapons to Russia. Ukraine now also has 1,920 warheads classified as strategic offensive weapons which it has promised to hand over to Russia.

The condition of the Ukrtyiye structure where the 4th power unit of the ChAES has been buried especially alarms specialists and the public. Although the discharge of radionuclides beyond its boundaries is within the norm, the structure has cracks with a total area of 200 square meters. In addition there is the danger that the sarcophagus may not withstand the estimated 30-year time period because of the loss of the binding qualities of the concrete under the radiation's effect.

The international competition declared by Ukraine for plans to extend the service life of the installation and ensure its safety drew 180 proposals. Among them we can mention the joint development project of the French Bouygues and SGN companies and a number of Ukrainian and Russian organizations; it proposes to build a high-strength casing which will cover the existing sarcophagus. Bouygues, which heads this group, promises to provide the construction part and SGN the safety analysis. In light of that it is assumed that the French and Ukrainian governments will finance the research on the project.

#### **Ukraine's Nuclear Power Plants**

AES, type of reactor	Unit Number	Electrical Output, in megawatts	Year Put into Operation
Zaporozhye		5,000	
VVER-1000	1	1,000	1984
VVER-1000	2	1,000	1985
VVER-1000	3	1,000	1986
VVER-1000	4	1,000	1987

## Ukraine's Nuclear Power Plants (Continued)

AES, type of reactor	Unit Number	Electrical Output, in megawatts	Year Put into Operation
VVER-1000	5	1,000	1989
Rovno*		1,818	
VVER-440	1	402	1980
VVER-440	2	416	1981
VVER-1000	3	1,000	1986
Khmelnitskiy			
VVER-1000	1	1,000	1987
Southern Ukraine			
VVER-1000	1	1,000	1982
VVER-1000	2	1,000	1985
VVER-1000	3	1,000	1989
Chernobyl			
RBMK- [High-Power Channel Reactor] 1,000	1	1,000	1977
RBMK-1000	2**	—	1978
RBMK-1000	3	1,000	1981
RBMK-1000	4***	—	1983

A Total of 14 operating units with a total capacity of 12,818 megawatts

\*The "Rovno" project is being realized; the basis of it is the methodology of higher safety adopted for U.S. AES's.—\*\*Closed after a fire in 1991.—\*\*\*Exploded in 1986.

### Ukraine: Defense Ministry Rebuts Nuclear Safety Scare

PM0203124593 Moscow IZVESTIYA in Russian  
25 Feb 93 p 2

[Ukrainian Defense Ministry Press Service statement, accompanied by introduction and editorial office comment: "Ukrainian Defense Ministry Rebuts IZVESTIYA Article Via Its Own Newspaper"]

[Text] On 16 February 1993 IZVESTIYA published an article by Viktor Litovkin entitled "Second Chernobyl Brewing in Ukraine's Missile Silos." That article, NARODNA ARMIYA says, could have broad political repercussions and cause alarm in the world community over the nuclear and environmental safety of strategic nuclear weapons deployed on the territory of Ukraine.

Kiev, 23 February—The Ukrainian Defense Ministry Press Service is authorized to state that the IZVESTIYA article is not in keeping with the spirit of relations existing between Ukraine and the Russian Federation on the question of guaranteeing the safety of nuclear weapons and reports incorrectly the cause of the existing difficulties in guaranteeing nuclear safety.

A meeting between state delegations of Ukraine and the Russian Federation headed by Ukrainian President

Leonid Kravchuk and Russian Federation President Boris Yeltsin was held on 15 January 1993. For the purpose of guaranteeing the nuclear and ecological safety of the strategic nuclear forces in Ukraine and Russia, the sides agreed to specify a system of material and technical backup and implementation of work to ensure the supervision of the operation of the strategic nuclear forces' missile systems in accordance with the warranties and as specified by the designers. The governments of Ukraine and the Russian Federation were instructed to prepare and conclude specific agreements to ensure the implementation of this accord.

The Ukrainian and Russian Federation state commissions have already conducted the first round of talks on problems of ensuring nuclear and environmental security and fulfilling the terms of the START Treaty since its ratification by the Ukrainian Supreme Soviet. A draft agreement between Ukraine and the Russian Federation on material and technical backup and supervision in accordance with the warranties and as specified by the designers has been prepared, and constructive dialogue and a search for mutually acceptable solutions regarding all questions connected with nuclear weapons are under way.

Ukraine is indeed experiencing certain difficulties in ensuring technical backup for combat missile systems. These difficulties are due to the disruption of economic links between Ukraine and the Russian Federation, as a consequence of which units of the Strategic Missile Forces in Ukraine have been unable to obtain promptly components and spare parts produced on the territory of the Russian Federation. For that reason responsibility for the safety of nuclear weapons deployed in Ukraine should be equally shared by the Ukrainian and Russian sides.

In preparing the article on nuclear missiles in Ukraine the IZVESTIYA journalist did not contact the Ukrainian Defense Ministry and expressed a subjective, one-sided view of the problem in his article. He did not have sufficient grounds to talk about a real threat of nuclear catastrophe at missile force facilities in Ukraine.

The question of the future of nuclear weapons is not an idle one and there is no room for any deception here. It cannot be interpreted in a vague way or contain ambiguity. Both Ukraine and Russia are convinced of this.

As of today there are no grounds for doubting that the two neighboring friendly states are capable of guaranteeing the complete nuclear and environmental safety of nuclear weapons. [as published—no opening quotation mark]

From the editorial office:

While publishing this statement we are obliged to acknowledge that it bears... no relation whatsoever to the article by our IZVESTIYA military correspondent entitled "Second Chernobyl Brewing in Ukraine's Missile Silos," as that article—from its first to its last line—

touched on the military technical and economic aspects of the safety of nuclear weapons deployed in Ukraine: For example, the fact that 16 SS-24 missile launchers on alert status in Pervomaysk have overrun the scheduled inspection and maintenance date by 8 to 10 months or the fact that the defense and protection systems at 20 launchpads have been defective for more than two months now...

These and other more than alarming facts were, clearly, not invented by the journalist. The article was based on facts uncovered by investigation carried out by specialists of the Strategic Missile Forces Main Staff. And the conclusions about the potential for disasters involving nuclear weapons were drawn by those people vested with legal authority.

However, the Ukrainian Defense Ministry has preferred not to notice the obvious, switching the argument about the state of the missiles from the military technical to the political plane. Incidentally, the repeated attempts by the author of the article to obtain at least some comment at the Ukrainian Defense Ministry ended each time with a categorical refusal. On 23 February, when Litovkin tried to get through on a military line to Lieutenant General Aleksey Kryzhko, chief of the center of the Administrative Directorate of the Ukrainian Defense Ministry Strategic Nuclear Forces, the latter told the telephonist—and this was heard in Moscow—to say that the general was not in his office.

Alas, the Ukrainian Defense Ministry Press Service's official response offers no reassurance on the question of the complete safety of the nuclear missiles.

**Ukraine: Pollution Figures for 1992 Reported**  
LD2602120793 Kiev UKRINFORM in Russian  
1922 GMT 24 Feb 93

[Text] Kiev, 25 Feb (UKRINFORM)—Emissions of harmful substances into the atmosphere from fixed sources of pollution in Ukraine decreased last year by 2 percent in comparison with 1991, and comprised more than 8 million tonnes. A decrease in emissions occurred in all oblasts, with the exception of Lugansk and Ivano-Frankovsk Oblasts. However, the state of the air basin remains unsatisfactory. As before, the most polluters are among metallurgical (20 percent), power engineering (29 percent) and coal industry (17 percent) enterprises.

Some reduction of emissions is connected with the decline in volumes of production. At the same time, every fourth enterprise has increased its emissions of harmful substances. One hundred and seventeen cases have been recorded of the maximum permitted concentrations of harmful substances being exceeded by 10 or more times in Gorlovka, Krasnoperekopsk, Yenakiyevo, Dnepropetrovsk, Dzerzhinsk, and Armyansk.

**Ukraine: Kravchuk Views Conflict With Russia, Missiles**

AU0203084593 Hamburg DER SPIEGEL in German  
1 Mar 93 pp 151-153

[Interview with Ukrainian President Leonid Kravchuk by Martina Melmerich and Olaf Ihlau in Kravchuk's office in Kiev; date not given: "Freedom Is Freedom"]

[Text] *[DER SPIEGEL] Mr. President, you said at one time that existing side by side with Russia is like sharing a bed with an elephant. Is Ukraine now being crushed by this elephant?*

[Kravchuk] That was actually meant to express our respect for Russia. I intended to stress its power.

*[DER SPIEGEL] And thus also the danger that may emanate from Russia?*

[Kravchuk] Of course. When such a great state carries out abrupt changes—in politics, in the economic sector, or in border affairs—we feel it immediately.

*[DER SPIEGEL] Russia is currently threatening to stop the supply of oil and gas, if you refuse in the future to pay world market prices. Is there a sort of political blackmail behind it?*

[Kravchuk] Why should I reproach Russia for selling oil at world market prices? However, then Russia must also accept the idea that many other things are calculated on the basis of world market prices and sold accordingly—for instance, the use of Ukraine's infrastructure with its pipelines, roads, railroads, and airspace. Russia needs them for its exports to the West. I advocate fairness. If someone asks us to pay world market prices, then I would suggest world market prices for everything.

*[DER SPIEGEL] Did you figure out what you could demand from the Russians in return?*

[Kravchuk] Of course I did. We would end up well and would have enough hard currency to pay for oil and natural gas.

*[DER SPIEGEL] Russian Deputy Prime Minister Aleksandr Shokhin has offered Ukraine a rebate for raw material supplies if it agrees to the setting up of Russian military bases. Do such offers irritate you?*

[Kravchuk] Economic problems should not be linked with military and political aspects. Economic agreements must be based on the nations' interests. I will never yield to military pressure. *[DER SPIEGEL] There is also a dispute with Moscow over the 176 intercontinental missiles based in Ukraine. Is it true that you do not receive the necessary technical assistance from Russia to maintain and protect those weapons?*

[Kravchuk] We believe that Russia too has an interest in seeing these missiles safe.

[*DER SPIEGEL*] But the Moscow *IZVESTIYA* sees in the Ukrainian missile silos the "danger of another Chernobyl," and safety tests are allegedly no longer carried out regularly at 16 missile launching bases where increased doses of radioactivity have reportedly been noted.

[Kravchuk] That is not true, these are rumors. I have detailed information from the Defense Ministry, saying that all silos are safe and under control. Russia is giving technical aid and will continue to do so. There is just one problem that has not been correctly described. Russia says: The missile bases on Ukrainian territory are Russian property. According to this, Russia would maintain its own missiles in our country.

[*DER SPIEGEL*] Of course you do not agree.

[Kravchuk] We do not claim operational missiles. But we want to have the components of the missiles once they are disassembled.

[*DER SPIEGEL*] What for?

[Kravchuk] That is a matter of principle. If we claimed the operational missiles, we would promptly be considered one of the nuclear powers. We reject that, however.

[*DER SPIEGEL*] Do you intend to sell the devilish nuclear stuff to the highest bidder?

[Kravchuk] No. We want to reuse the uranium in our nuclear power plants. It is manufactured into fuel rods in Russia and we then use it.

[*DER SPIEGEL*] Your national democratic opposition would prefer to keep the nuclear weapons—as a deterrent against any territorial claims by Russia.

[Kravchuk] That is a certain group to which some sections of the opposition and other deputies belong. There are not very many of them.

[*DER SPIEGEL*] In western Ukraine, 50 percent of the people would allegedly like to see their country continue as a nuclear power.

[Kravchuk] I do not know of such opinion polls; by the way, the START-1 disarmament treaty will be ratified by parliament, not by the people.

[*DER SPIEGEL*] But there is apparently opposition in this parliament to the ratification of the START-1 agreement. The deputies demand security guarantees of the nuclear powers and financial compensation first.

[Kravchuk] There are such deputies. But we will solve the problem of the security guarantees. There are already agreements with the United States, Russia, Great Britain, and we are also discussing the problem with France.

[*DER SPIEGEL*] Are your missiles perhaps a pawn for the desirable billions from the West?

[Kravchuk] We need money for the destruction of our nuclear weapons. I held talks with the European Bank for Reconstruction and Development on the creation of a fund to finance the scrapping of the missiles. The destruction of such weapons costs a lot of money. Ukraine is currently experiencing a serious economic crisis. If we were to use our whole budget now for scrapping the missiles, our people would not understand that. So we need help.

[*DER SPIEGEL*] Reportedly you want \$2.5 billion.

[Kravchuk] I do not know of this figure. The most important thing is to destroy the missiles. There are no exact cost estimates. When we have eliminated the first missile base, it will be clear what it costs.

[*DER SPIEGEL*] But if you were to remain a nuclear power, the whole nuclear disarmament program would be obstructed. Moscow has already said that in such a case, it could not accept a further reduction in its strategic nuclear weapons, as agreed upon with the United States in the START-2 treaty.

[Kravchuk] Our parliament is aware of its responsibility. Ukraine will not obstruct disarmament and the destruction of nuclear weapons. We must see one thing: Ukraine did not build the missiles on its territory, but it is now responsible for their destruction. That is a legacy of the Soviet Union, which we must deal with, and Ukraine cannot do so alone.

[*DER SPIEGEL*] When will START-1 be ratified?

[Kravchuk] It is already on the agenda for the next parliamentary sessions.

[*DER SPIEGEL*] The West expects you to close down the unsafe nuclear power plant at Chernobyl before the end of this year. Given the Ukrainian energy crisis, is this hope realistic at all?

[Kravchuk] It is very realistic. We are making preparations now. Germany has helped us considerably in this respect. Closing down this nuclear power plant is also a safety issue.

[*DER SPIEGEL*] So Chernobyl will be stopped before the end of 1993 at the latest?

[Kravchuk] Of course.

[*DER SPIEGEL*] How do you dispose of the fuel rods from Ukrainian nuclear power plants that Russia does not want?

[Kravchuk] We have prepared a program for the storage of radioactive waste and will solve the problem as all countries having nuclear power plants do.

[*DER SPIEGEL*] This means that Ukraine is continuing to rely on nuclear energy, instead of reducing it in view of the Chernobyl disaster.

[Kravchuk] When and if we get the safety problems under control, nuclear energy will continue to be developed further everywhere—including in Ukraine.

*[DER SPIEGEL] When are you going to sign the treaty on the nonproliferation of nuclear weapons?*

[Kravchuk] Our parliament will simultaneously decide on the START agreement and the treaty on the nonproliferation of nuclear weapons. I introduced both documents in parliament in November last year.

*[DER SPIEGEL] Ukraine has been independent since August 1991. Has it been worthwhile to secede from the Soviet Union?*

[Kravchuk] You do not have to ask a canary in its cage whether it wants to be free or not. If the door is open, it will fly away. The bird does not have guarantees either; it was safe in its cage. Ukraine lived in a cage for 350 years. Today it wants to have its own state and knows that this is not easy.

*[DER SPIEGEL] But the bird that flew away has lost quite a lot of flesh.*

[Kravchuk] That is true, but the bird does not think about it, because freedom is freedom.

*[DER SPIEGEL] Is there no disappointment at the lack of investments and credits from the West?*

[Kravchuk] I am annoyed to note that the West does not see what is happening here. The West assesses events here by the prism of its own interests. It would prefer to deal only with a single nuclear state. I hear from the West time and again that it would be better if the Soviet Union still existed. That does not prove particular understanding for the interests of the peoples that had to live in the Soviet empire. But any attempt to reestablish something like the Soviet Union would lead to a terrible war that would be worse than the war in the former Yugoslavia.

*[DER SPIEGEL] That sounds as if you see an acute danger.*

[Kravchuk] Europe and the rest of the world must know that any attempt to return to the old Soviet Union could lead to a catastrophe. We are told that we should first stabilize our country, and then we would be aided. However, once we have stabilized our country, we do not need help any more.

*[DER SPIEGEL] Who is trying to turn back the wheel of history—those who intend to replace Yeltsin in Russia?*

[Kravchuk] Such forces are active. They appear at the sessions of the newly founded Communist Party of Russia and at massive demonstrations in Moscow.

*[DER SPIEGEL] The Communist Party also intends to reorganize itself in Ukraine.*

[Kravchuk] Yes, unfortunately, these forces are having an easy game because of the economic crisis.

*[DER SPIEGEL] But there is no real reform in the Ukrainian economic system. Have you lost the courage to carry out changes? Parliament is even blocking the privatization of small and medium-sized companies.*

[Kravchuk] Privatization is just a small part of the reform program. In Lvov an auction of small companies took place just recently. We are also beginning to form joint-stock companies now. Privatization cannot be carried out more swiftly than the people want. We must avoid social unrest.

*[DER SPIEGEL] How do you know that the people are opposed to privatization?*

[Kravchuk] It is a special feature of our state that uncontrolled privatization is not possible here. This could lead to a catastrophe. The liberalization of the economic sector must be controlled by the state. It was our mistake that we did not see this from the start.

*[DER SPIEGEL] So you do not by any means want to carry out a drastic change to the market economy, as Poland did, even though successes have been achieved there now after three bitter years?*

[Kravchuk] I would like to see this success consolidated in Poland. However, if a country wants to become an independent state, it must be able to produce its own goods and not just resell foreign products.

*[DER SPIEGEL] Your problem is that you depend 80 percent on Russia for your energy imports, and most of your products go to Russia. So Ukraine depends much more on Russia than other Eastern European countries.*

[Kravchuk] That is true. A total of 77 percent of the goods traffic within the CIS republics is handled between Ukraine and Russia. That is why our relations are so important.

*[DER SPIEGEL] Should the CIS remain as it is, or should it be reformed?*

[Kravchuk] It should remain as it is. The crucial issue—economic agreement between the CIS members involved—must be solved within the framework of the CIS. If we succeed in doing so, the CIS will prosper. Economic cooperation is the most important thing. We are not ready to accept political integration. Western Europe, too, has not yet formed a political union either.

*[DER SPIEGEL] Mr. President, we thank you for this interview.*

## CAUCASUS/CENTRAL ASIA

**Armenia: Impact of Arpa-Sevan River Diversion Project Viewed**

93US0241C Beirut AZTAG in Armenian 9 Nov 92 p 3

[Interview with Robert Shahoyan, director of the Administration for the Utilization of the Vorotan-Arpa-Sevan Tunnels; date and place not specified]

[Text] The ARMENPRES correspondent had a conversation with Robert Shahoyan, director of the Administration for the Utilization of the Vorotan-Arpa-Sevan Tunnels, on the occasion of the 10th anniversary of the start of the Arpa-Sevan project. Shahoyan answered the correspondent's questions.

[ARMENPRES] *What role has the water carrier played in raising the water level of Lake Sevan?*

[Shahoyan] The Arpa-Sevan project had a singular and dramatic impact on Lake Sevan. Thanks to this project, the decline in the water level of the lake was stopped last year. Up to that time 1,643 million cubic meters of water were diverted from the Arpa river and its tributaries into the Sea of Kegham [Lake Sevan]. Had it not been for this diversion from the Arpa river, the water level of Lake Sevan would be 1.40 meters lower than what it is now.

This unique hydrological project today discharges into Sevan 17 cubic meters of water per minute.

[ARMENPRES] *What plans and programs are in place for replenishing the water stocks of Lake Sevan?*

[Shahoyan] Work continues on raising the water level of the lake and increasing its water stock. In the past, an average of 400 million cubic meters of water was taken from the lake to quench the thirst of farms and vineyards. However, in the last 5 years this number did not exceed 240 million cubic meters. The new life-giving artery of Sevan will be the 21.5-kilometer Vorotan-Arpa tunnel whose 17.5 kilometers have already been dug. This tunnel will divert 165 million cubic meters of water [per year] from the Vorotan river to the Kechut dam and then to Sevan. The Herher dam, which came on line this year with a capacity of 23 million cubic meters, will also reduce the drain on Sevan which receives the same amount of water from the freed waters of Yegheg.

The completion of the Yeghvard dam may contribute significantly to the task of raising the water level of Sevan. That would cut the quantity of water taken from the lake for irrigation by about 80 to 90 million cubic meters a year. If this dam and other auxiliary measures are completed, it will be possible to add 400 million cubic meters of water to Sevan each year and thus raise the lake's water level by about 30 to 40 centimeters a year. When we achieve the desired 6 meters [of increase in the water level] and establish a new hydrological equilibrium, it will be possible to take 500 million cubic

meters of water a year from Sevan for use in irrigation and energy generation while keeping the lake's water level steady.

[ARMENPRES] *Are there any positive developments in terms of the improvement of Sevan's ecology?*

[Shahoyan] The improvement of Sevan's ecology is an urgent imperative today. It is heartening to see that predictions by some scientists have not come true. These scientists argued that the waters of the Arpa river are incompatible with the waters of Sevan and that they can damage the lake. Studies conducted over many years have proven the opposite. Following the arrival of water from the Arpa, the quality of water in Sevan has tended to improve, mineralization has declined and its clarity has increased. Unfortunately massive pollution of the lake continues. Today sewage from most surrounding settlements is dumped into the river without any controls. Spraying and flooding of fields also dumps into the lake fertilizers and other chemicals used in agriculture. Recently a new and dangerous source of pollution has surfaced. The rise in the water level of the lake has drowned many trees and plants that lined its shore. These trees and plants decay and create various toxic substances which degrade the quality of the lake's water. We need to think about removing this green matter from the lake gradually in order to correct this situation. Otherwise they may have an irreversible impact on the lake. In the future, Sevan will become the source of drinking water for the republic's central regions and its capital, Yerevan. Therefore we must preserve the lake like the apple of our eye.

**Azerbaijan: Commission To Decide Fate of 'Monster' Radar Station**NC2602160393 Baku ASSA-IRADA in English  
0512 GMT 26 Feb 93

[Text] Baku, 25.02.93 (ASSA-IRADA)—What is the future of the monster-radio-locating station (RLS) in Azerbaijan which is still the main nuclear shield at the south border of the former USSR. It will be decided by governmental commission of Azerbaijan which is to be created in accordance with the decree of the Milli Mejlis. It goes without saying that it will be done jointly with analogous commission of Russian Government, General Timoshenko, the deputy of mejlis told ASSA-IRADA Agency. The radio-locating station is in the environs of Gabile Town, established in 1974—at the height of 665 metres above sea level, and serves for spying upon ground, air and space objects in the radius of 15 thousand km. Its aim is the defence of former Union territory against the rocket attack and reconnaissance activity of foreign states. Not a single Azerbaijani officer or soldier has been admitted to the station for 19 years. RLS is fed by 5 special power-plants, each of 15 mln. [million] watt. As a result of high-frequency electromagnetic wave radiation by the station high-level of mortality, serious diseases of the nervous and endocrine systems, themorphological composition of blood

changes are registered among the population of close districts [sentence as received]. There are cases of mutant birth. There isn't anything alive in the water flowing out of the complex. Meat, fruits and vegetables of this zone are very dangerous. Such stations have already been liquidated in Latvia, Ukraine, and other regions of the former USSR as the result of the pressure from the public.

#### Azerbaijan: Scientist Notes Radar Station Affecting Environment

OW0503062293 Baku Azerbaijan Radio Televiziya Television Network in Russian 1500 GMT 26 Feb 93

[From the "Telefaks" newscast]

[Text] Difficulties in the ecological situation and unsatisfactory sanitation conditions in the city and republic have forced mobilization of the potential of the Republic Hygiene and Epidemiology Center. We met with Mais Sailov, head of the department of laboratory diagnostics and candidate of biological sciences. [video cuts to show lab technician at work, then shows unidentified correspondent interviewing Sailov in a laboratory]

[Begin recording] [Sailov] The department of laboratory diagnostics of the Republic Hygiene and Epidemiology Center basically monitors the diagnosis of infectious diseases throughout the republic. In other words, all laboratory organizations working on infectious diseases at the republic's sanitation and epidemiology stations are subordinate to us.

There are several laboratories in the department which work on a number of topics. There is a laboratory diagnosing bacteriological infections, a laboratory diagnosing virus infections, and a laboratory—the one we are in right now—which deals with the treatment of immunological problems, since immunity is an issue in any infection.

[Correspondent] You were a member of the commission that worked in Kutkashen checking out the radioactive danger in the area. What can you tell us about that?

[Sailov] Yes, I was a member of the commission which was appointed by the National Assembly. We carried out comprehensive research on this issue for four months. But, since literally the day before yesterday there was a National Assembly session on this question, a closed session with the press and television asked to leave the chambers, I can only say briefly that very extensive work was carried out considering the short period of time. The commission included specialists from a number of fields of science. The work was very comprehensive and interesting. There were academicians, botanists, zoologists, and soil scientists involved, as well as representatives of the space research institute and medical workers.

Naturally, to put it briefly, the radar station does have an effect on its surroundings, both on the flora and fauna as well as on the health of people. We have undertaken a

study of the immune systems of the population and the study of immunological parameters in the area, and we have some precise findings on the influence or the effect of magnetic radiation in the zone covered by the study. Immunological indexes were found to be lower when compared to a control zone. Since we selected the control zone in Tauzskiy Rayon, where indexes were roughly the same in agriculture, in tobacco cultivation, and in other ecological factors, we could in principle relate our findings with the influence of the radar station. [end recording]

#### Azerbaijan: Environmental Protection Agreement Signed with Turkey

LD0403164293 Moscow Mayak Radio Network in Russian 1530 GMT 4 Mar 93

[Text] A treaty was signed in Baku today on mutually advantageous cooperation between the governments of Azerbaijan and Turkey in protecting the environment. The document envisages, in particular, developing clean, waste-free technological processes, creating programs for preserving unique natural species, as well as mutual assistance in protecting the ecology of the Black and Caspian seas.

### BALTIC STATES

#### Estonia: EBRD Financial Aid Requested for Dismantling Paldiski Reactors

WS0503101193 Tallinn BNS in English 0756 GMT 5 Mar 93

[Text] Tallinn, Mar 04 (BNS)—Estonia hopes to receive financial support from the European Bank for Reconstruction and Development (EBRD) for the dismantling and transportation from Estonia of the nuclear reactors located at an ex-Soviet base in Paldiski. Foreign Minister Trivimi Velliste said.

"At a recent meeting with the EBRD leaders in London, aid from the Bank for building a railway branch to Paldiski was discussed. The railway could be used for transporting the dismantled reactors," Velliste said at a press conference today.

He said Estonia turned to the EBRD namely because the Bank has special funds made available for the reduction of radiation risks. "It's from EBRD, if from anywhere at all, that we can get money for this," he added.

#### Estonia: IAEA Support in Dismantling Paldiski Reactors Sought

WS0803115593 Tallinn BNS in English 1924 GMT 6 Mar 93

[Text] Tallinn, Mar 06 (BNS)—Juri Liim, leader of the working group on the Paldiski navy base, thinks that, against a backdrop of stalled negotiations on withdrawal of Russian troops of Estonia, the possibility of using the

services of IAEA [International Atomic Energy Agency] engineers in dismantling two military reactors here, one of which is of the latest design, as a partial success.

The Russian negotiators have until now flatly rejected the very idea of foreign help because they wanted to preserve secrecy of that reactor. But at the ninth round of Estonian-Russian negotiations, Liim notes, although they did not express consent, the Russians did not protest, either.

What is important is the status of the IAEA engineers to which the Russian negotiators would agree; observers or direct participants of the dismantling operation, said the leader of the working group which was set up during the ninth round.

Estonia would prefer the latter option because, although Russia has expressed readiness to send its best men for the job, they did not have the necessary knowledge and expertise, Liim thinks. The most important stage is the removal and transportation of the rods. At the transportation stage the slightest negligence or acts of terror may cause irreparable damage of a disastrous scale. This is why IAEA aid will be invaluable, Liim emphasized.

#### **Latvia: Legislature Adopts Law on Environmental Protection**

*WS0303145593 Tallinn BNS in English 3 Mar 93*

[Text] Riga, 3 March 1993, (BNS)—The Latvian parliament passed an environmental bill Tuesday [2 March] that creates, monitors and protects nature territories within the country.

The law was created in an attempt to harmonize state, regional and private interests in establishing and maintaining nature territories.

The law includes several different types of territories nature reserves, national parks, nature parks, natural monuments, nature restriction and protected landscapes.

MP Arvids Ulme told BNS the law was necessary to preserve biologic diversity of the Latvian nature.

Ulme emphasized the law by no means intends to bar people from nature, it promotes the normal coexistence of man and nature.

#### **Lithuania: Ignalina Director Details Work on Missing Fuel Cassette**

*WS0403095793 Vilnius ELTA NEWS BULLETIN in English 1532 GMT 3 Mar 93*

[“Inventory of Ignalina’s Nuclear Fuel Inaccurate”—ELTA NEWS BULLETIN headline; from ELTA “NEWS BULLETIN” No. 197]

[Text] 3 March 1993—Searches are still being conducted to locate a nuclear fuel cassette which was noticed missing after the yearly planned inventory. A few days

ago we announced that two commissions have been formed to fulfill this job: one—representing the electric power station, the other—the state atomic energetics safety inspection (VATESI).

Ignalina’s director general Viktor Sevaldin announced to VATESI that the electric power station’s commission anticipates to work until June 1. The inspection commission disagrees and demands that the job be finished by April 1. The International Atomic Energetics Agency insists that such events be investigated within a month’s time.

VATESI chairman Pavilas Vaisnys said that checking the fuel cassette inventory system, we find more and more imperfections and the existence of work negligence. One of the largest deficiencies in the current stock system—that the cassettes are only counted and not separately identified. It is not clearly defined where each cassette’s storage space is; this system does not creates obstacles for the possibility of internal sabotage.

This year we are preparing to transfer to a computer inventory system. However, according to Vaisnys, even the computers won’t help if the essence of the present inventory principles are not changed, if work continues to be negligent. The commissions will not only investigate the event, but will also examine deficiencies in the current nuclear fuel cassette inventory and transportation system.

#### **Lithuania: Ignalina Nuclear Plant Officials Refute Accident Rumor**

*OW0303194393 Moscow BALTFAX in English 1909 GMT 3 Mar 93*

[Following item transmitted via KYODO]

[Text] An error made by employees of the Civil Safety Department on Wednesday [3 March] gave rise to rumors of an accident at the Ignalina nuclear power plant which supposedly drastically increased the level of radioactivity in the atmosphere. Baltfax was told that the rumors were quickly refuted. The radiometry laboratory of the Environmental Protection Department reported that the level of radiation in Lithuania remains the same as before - around 10-12 micro-roentgens. A Baltfax correspondent learned from the Civil Safety Department that on Wednesday they checked the communications network. Apparently, instead of a tape of music, technicians played a tape with a notification of an accident at the nuclear plant and an increase in atmospheric radiation. The tape was broadcast over radio airwaves in Vilnius. Rumors about the increase in the level of radiation were refuted by Genady Negrevod, the head engineer at Ignalina, and Povilas Vaivnys, director of the State Inspection Service for Atomic Safety.

## REGIONAL AFFAIRS

### EC Environment Agency Pleads for 'Green' Economic Revival

BR0203180693 *Antwerp DE FINANCIËEL-EKONOMISCHE TIJD* in Dutch 18 Feb 93 p 5

[Article by "KV": "European Environment Agency Pleads For 'Green' Economic Revival—EC and Member States Must Introduce Welfare Indicators"]

[Text] Brussels—The overall organization of European environment associations, the European Environment Agency, is calling upon the Twelve to work on a "green" economic revival. Europe should take the lead in the field of environmental policy and apply that strategy as the driving force to boost economic development and employment. The conventional economic indicators should be complemented with a welfare indicator.

"Economic recovery in Europe is impossible, unless it is based on a strategy which integrates environmental protection," Raymond Van Ermens, secretary-general of the European Environment Agency, stated at a press meeting. "Japan and the United States have already expressed their intention to follow such an environment-friendly growth strategy." The growth strategies proposed by the EC and its member states to get out of the economic slump are still characterized by a race of "conventional economic growth." This will lead to a waste of public funds, manpower, and natural resources, Van Ermens says. "The ongoing negotiations on packaging and packaging waste, the export of toxic waste, the implementation of an ecological audit, transport, and the CO<sub>2</sub> energy tax do not create the impression that all EC ministers are willing to turn these measures into driving forces for economic recovery and for acquiring a leading position in the world."

The European Environment Agency is demanding a discussion on the environmental effect of projects financed through old and new EC funds. "It is irrational to invest in several thousand kilometers of new highways and railroads and at the same time to try and achieve sustained development," Van Ermens says. "We have to promote a new kind of development, based on a coordinated policy." A sustained growth strategy is also beneficial to employment. Sustained growth is indeed very labor-intensive, the environment agency claims.

According to Van Ermens, the Community must soon implement new economic indicators, which take account of the durability of the environment and of public welfare. The Environment Agency proposes to extend the EMU's (European Monetary Union) conventional convergence criteria (inflation, public deficits, etc.) with a welfare standard. Furthermore, the tax system should be reorganized and the CO<sub>2</sub> energy tax be approved this year, the environment agency argues.

### Memorandum

In a memorandum handed over to the Danish President of the EC Council of Ministers, the European Environment Agency expresses its concern about the negotiations which are currently being conducted by Sweden, Finland, and Austria for entry into the EC. It seems that these countries will have to lower their environment standards under EC pressure. This is unacceptable.

### EC Commissioner Views 'Subsidiarity,' Industrial Policies

AU0303091093 *Vienna KURIER* in German 2 Mar 93 p 2

[Interview with EC Commissioner Martin Bangemann by Margaretha Kopeinig in Brussels; date not given: "Environmental Protection Must Continue To Be Predictable"]

[Excerpt] *[Kopeinig] The EC wants to delegate decisions that can be better made regionally and nationally and only solve major problems at the Community level. Brussels is accused of too strong centralism. Subsidiarity is the keyword. What do you think about this?*

[Bangemann] Everything that we are doing fully corresponds to the principle of subsidiarity. However, that does not deny that many things can only be satisfactorily solved at Community level, for example, a reasonable subsidy policy or the implementation of ambitious environmental policy objectives. What use is it if some member states introduce strict norms, while the rest do not join in? Subsidiarity does not mean that everything must be decided at a low level.

*[Kopeinig] In the Maastricht treaty a joint European industrial policy is planned. What measures are you taking to strengthen the competitiveness of industry?*

[Bangemann] Basically, the weak points of European industry have to be eliminated first and a fresh impetus must be given to new technologies.

*[Kopeinig] Industry and environmental protection—is that not a contradiction?*

[Bangemann] Yes, if environmental protection is seen as a cost factor. However, ambitious environmental policy objectives can also give a fresh impetus and create additional demand. At any rate, it is important that environmental protection continues to be predictable and the economy is not being constantly shaken.

*[Kopeinig] Can the EC growth initiative, which Commission President Jacques Delors proposed, overcome the economic crisis?*

[Bangemann] Today there is no longer a single country that can take over the role of an economic locomotive alone. The EC cannot do it either. Therefore, it is important that the GATT round will be finally concluded, so that world trade will again stimulate growth.

[Kopeinig] Austria's negotiations with the EC are in progress. State subsidies continue to be common practice in Austrian industry—does this constitute a problem?

[Bangemann] The Commission is strict in seeing to it that subsidies do not result in distortions of competition. Only subsidies that facilitate structural change and eliminate regional imbalances are permitted. [passage omitted]

## AUSTRIA

### Ministers Conclude Free Trade Agreement With Hungary

AU2702201493 Vienna DIE PRESSE in German  
27 Feb 93 p 9

[APA report: "Cooperation With Hungary"]

[Text] Vienna—Economics Minister Wolfgang Schuessel said that the bilateral negotiations between Austria and Hungary within the framework of the EFTA [European Free Trade Association] free trade agreement have been concluded. In the talks, which were also attended by Agriculture Minister Franz Fischler and Hungary's Foreign Trade Minister Bela Kadar, all issues in the fields of agriculture and industry were "politically agreed on."

The further intensification of economic relations between Austria and Hungary was also the focal point of talks that the economics minister held with Hungarian Finance Minister Ivan Szabo in Vienna. The contacts have gained dynamism over the past few years: Over the first 11 months of 1992, domestic exports rose by 8 percent to 14.2 billion schillings; imports from Hungary increased by 6 percent to 11 billion schillings. With a market share of 28 percent, Hungary is Austria's most important trading partner in Eastern Europe. Conversely, Austria is Hungary's second most important trading partner after Germany.

The biggest growth rates in Hungarian imports were reached with machinery and transportation means (29 percent); imports of finished goods have also clearly increased (plus 15 percent). In Austria's exports food-stuffs, energy sources, and finished goods rose most strongly, namely by 20 percent each. However, deliveries of beverages, which were very high most recently, declined by 17 percent.

## BELGIUM

### Greenpeace Stages Protest at Plutonium Production Plant

AU0203152893 Paris AFP in English 1514 GMT  
2 March 93

[Text] Brussels, March 2 (AFP)—Dozens of activists from the environmental group Greenpeace on Tuesday

[2 March] blocked the entrances to a Belgian plutonium fuel plant to protest production of the radioactive substance, police said.

They said 40-60 demonstrators chained themselves to the fence of a compound in the northern city of Dessel, blocking trucks from entering factories of the firms Belgonucleaire and FBFC [expansion not given

Greenpeace officials said the action followed the move by the firms to sign new contracts with Japan for the supply of plutonium fuel, which is made from plutonium extracted from nuclear wastes.

A police spokesman said the authorities had no plans to move against the Greenpeace demonstrators, but they expected them to end their protest peacefully by Tuesday night.

But Greenpeace officials said they would do everything they could to halt the Dessel plants' production of plutonium fuel, which is used in fast breeder reactors.

They said if current plans went ahead, European roads, railways, airplanes and ships would be carrying sharply increased amounts of the deadly substance over large stretches within the continent and overseas.

A Japanese shipment of 1.7 tonnes of plutonium from France to Japan late last year sparked a worldwide protest. Plutonium can also be diverted for use in making nuclear bombs.

Michel Racquet, of Greenpeace Belgium, said Tuesday's protest "marked a new phase of our international campaign against the plutonium industry."

## CYPRUS

### Greenpeace Appeals Against Construction on Protected Turtle Site

NC0303094393 Nicosia CYPRUS NEWS AGENCY  
in English 1620 GMT 2 Mar 93

[Text] Nicosia, Mar 2 (CNA)—Green Peace, the world environmental watch-dog, has appealed to the newly elected Cyprus President Glavkos Kleridhis to revoke a decision which would seriously endanger the life of a protected species of turtle.

In an open letter to the president, Green Peace Mediterranean campaign coordinator Mario Damato described the decision as "devastating" and noted it would endanger one of the few remaining nesting sites in the Mediterranean for the endangered green and loggerhead turtles.

The outgoing government of the republic took a decision last week to allow for a change in the construction indicator, thereby permitting the construction of hundreds of tourist villas in the Akamas peninsula, on the north western tip of the island, which is supposed to be strictly protected.

The peninsula includes protected gorges, a forest and the beaches of Toxevtra and Lara used as a home by the green and loggerhead turtle.

Damato demanded of the new president to repeal the previous decision "not only for this endangered species but for Cyprus and the Cypriot people."

Green Peace said no decision should be taken until after the release of a recommendation by the World Bank, commissioned by the Cyprus Government, and the alternative Green Peace proposal for the management of the area.

The letter pointed out that such a move on behalf of the new president would "signify the willingness of the new Cypriot Government to commit itself to the protection of endangered species such as sea turtles, and the environment as a whole."

## FRANCE

### Electric Car Fleets To Operate in 22 Cities

93BR0383 Paris INDUSTRIES in French  
Dec 92-Jan 93 p 6

[Text] Twenty-two experimental sites<sup>1</sup> have been selected by the Ministries of the Environment and of Industry for establishing an urban electric car network. These include three cities and two sites that are pioneers in the matter: Chatellerault, la Rochelle, Tours, Saint-Palais (Belle-Ile), and Sophia-Antipolis.

La Rochelle is the precursor of such an urban network. As early as a year ago, an initial agreement was signed between the city, the PSA [Peugeot] group, and EDF [French Electricity Company]. By September 1993, the agreement will result in 50 electric Peugeot 106 and Citroen AX cars being put into circulation, with EDF installing some 100 charging points. The city, in turn, will handle fleet maintenance and management. In fact, by using a magnetic card, the citizens of La Rochelle will be able to borrow a car at a public parking lot and give it back at another lot, where it will be recharged. This is a sort of "nonpolluting individual public transport." If the experiment is successful, 300 cars will be put into circulation in the city.

The city of Tours also plans a similar infrastructure for 1994. As regards Chatellerault, which has already been using electric cars since 1986, this city will install charging stations for the general public in the near future.

The number of cities applying for this experiment on a truly large scale has far exceeded expectations: No fewer than 50 cities applied, but only 22 were selected! But, patience, general usage of electric cars in the entire French urban network should become a reality in 1995!

## Footnote

1. The other cities in addition to the five pioneer sites are: Avignon, Bordeaux, Cherbourg, Douai, Grenoble, Le Havre, La Roche-sur-Yon, Lyon, Montigny-les-Cormeilles, Montreuil, Nanterre, Nantes, Nevers, Rouen, Saint-Quentin-en-Yvelines (associated sites: Versailles; the Saclay plateau; the Billancourt area), and Strasbourg.

## GERMANY

### Clean-Air Program for New Laender Enters Second Stage

93MI0355 Bonn TECHNOLOGIE-NACHRICHTEN MANAGEMENT-INFORMATIONEN in German  
28 Jan 93 pp 10-11

[Text] The interdisciplinary "Scientific Program Accompanying the Clean-Air Measures Over the New Federal Laender" (SANA) is now entering its second phase. It is receiving additional funding of approximately 15 million German marks [DM] from the BMFT [Federal Ministry of Research and Technology] for the period to 31 December 1995, with support from the Federal Environment Agency and its counterparts in the new laender.

The project aims to find out how the expected changes in pollutant emissions in the new laender affect the emission, transport, and precipitation of both directly emitted pollutants and pollutants formed in the atmosphere, and how these pollutants affect the biosphere. These studies are intended to achieve major new insights into the complex chains of effects and chemical processes that the pollutants trigger in the troposphere. These findings are expected to provide information on the complex interaction between the polluted atmosphere and the sensitive ecosystems, including pine forests, which are already badly damaged.

The studies focus on the territory of the former GDR, especially the Halle-Leipzig-Bitterfeld conurbation, which is badly polluted by the combustion of low-grade brown coal and the associated excessively high sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), soot, and heavy metal emission levels. The pollution level reached in 1990 was roughly equal to air pollution in western industrial conurbations in the fifties, of the type that came to be known as "London smog."

Despite its relatively short measurement program, SANA has already achieved a number of interesting results. For example, measurements from aircraft over the southern part of the former GDR have, as expected, detected extremely high SO<sub>2</sub> concentrations of up to 450 micrograms per cubic meter (μ/m<sup>3</sup>) of air. In contrast, the mean annual SO<sub>2</sub> level in the original federal laender is in the 40-50 μ/m<sup>3</sup>. Ground measurements of nitrogen oxide and volatile hydrocarbon concentrations in the Leipzig area were also far higher than expected, reaching

the levels detected in conurbations in the original federal laender (e.g., mean annual  $\text{NO}_2$  levels of 40-50  $\mu\text{m}^3$ ).

All this suggests that there are considerable, hitherto unheeded or unknown sources of these pollutants, particularly from domestic heating and industrial plants not subject to inspection. This is significant in that these gases contribute to the formation of secondary pollutants toxic to man and vegetation, and thus have a high hazard potential.

Forty teams from 22 institutions, 70 percent of which are located in the new laender, are taking part in SANA. The BMFT supported the first phase of SANA (1 December 1990-31 December 1992) with total funding of DM12 million. During this phase, the SANA scientific program was defined and the planned laboratory and field experiments were successfully carried out.

*Further information and a brochure detailing SANA's aims and the research already initiated are obtainable from Professor W. Seiler, Fraunhofer Institute of Atmospheric Environment Research (IFU), Kreuzeckbahnstrasse 19, D-W-8100 Garmisch-Partenkirchen, Tel. 08821-183-0; Fax 08821-73573.*

#### R&D Center Develops Advanced Equipment for Marine Research

93M10301 Bonn DIE WELT in German 28 Jan 93 p 9

[Article by Rolf H. Latussek: "New Measuring Instruments for Marine Research"]

[Text] The Marine Geosciences Center (Geomar) at Kiel presented new marine research equipment this week. Glass has proved a suitable material for use at depths of up to 4,000 meters: Compared with steel, it has the advantage of not rusting, and of admitting electromagnetic signals, including light, so a new instrument case made of glass makes it possible to transport photographic and video cameras, which can receive measuring and control signals without hindrance.

Marine research is particularly dependent on technical equipment that takes measurements and gathers data and samples in, on, and under water for prolonged periods on behalf of human researchers. Flow measurement plays a major part, whether near the surface or on the ocean floor.

Water motion of this type was previously measured using rotating propellers, but an acoustic flow meter has now been developed. Special loudspeakers transmit a sound signal, which is reflected by an acoustic mirror and picked up by a special microphone. As the sound waves are carried by the flowing water, the reflected signals hit the receiver at different points: The greater the flow rate, the greater the divergence from zero. The flow speed can be calculated from this divergence.

Several devices are mounted closely together on a support frame for the fullest possible all-round data acquisition. The "bioprobe" is a multicomponent system of this type, also featuring a bottom water sample scoop.

In order to be able to perform immediate, precise sample analyses on board, Geomar has developed a balance that compensates for the ship's motion. This "rough-sea compensating on-board balance," which can be set for seas up to force six, can be used to weigh samples to the nearest milligram.

#### Rape Oil-Based Diesel Fuel Found To Be Environmentally Unsuitable

93M10304 DIE WELT in German 29 Jan 93 p 6

[Article by Jan-Uwe Stahr: "Rape Oil Unsuitable as Diesel Fuel Substitute—Berlin Environment Agency Presents First Ecological Assessment—Disadvantages of Ecofuel Outweigh Benefits"]

[Text] Farmers' hopes of helping both the environment and themselves through the yellow-flowered rapeseed plant have been dashed. The Federal Environment Agency (UBA) in Berlin has just carried out a comprehensive ecological assessment of the pros and cons of rapeseed methyl ester as a diesel engine fuel.

Rape oil could be substituted for around 400,000 tonnes per year of diesel fuel, equivalent to around 1.6 percent of the total annual consumption of 23 million tonnes. Though this natural fuel gives off 65 percent of the greenhouse gas  $\text{CO}_2$  on combustion than conventional diesel fuel, this benefit is largely offset by the fact that the microbiological degradation of the nitrogenous fertilizers applied to the rapeseed fields releases climate-damaging nitrous oxide.

A comparison of the total climate-relevant gases emitted during the cultivation and combustion of rape oil/rape oil methyl ester with those released during the production and combustion of diesel oil shows that emissions from the renewable fuel are only 35 percent less. A drawback of rapeseed cultivation is that pesticides and herbicides, which cause soil pollution, have to be used.

In addition, says UBA President Heinrich von Lersner, there are "risks resulting from breeding and genetic engineering alterations to the rapeseed plants." Even from the purely economic point of view, rape oil comes off worse, as a subsidy of 1.90 German marks [DM] per liter would be needed to make it competitive with present diesel prices. The UBA's experts feel this money would be more effectively spent on, for instance, developing lower-emission diesel vehicles.

The UBA's ecological assessment therefore concludes that: "Promoting the use of rape oil/rape oil methyl ester as a diesel fuel substitute is not recommended from an environmental point of view."

### Greenpeace Alleges Safety Coverup at Morsleben Nuclear Dump

93M10331D Munich SUEDDEUTSCHE ZEITUNG  
in German 9 Feb 93 p 5

[Text] Serious safety problems at the Morsleben terminal nuclear waste dump in Saxony-Anhalt have been deliberately covered up by the German authorities, according to Greenpeace. Representatives of the environmental organization have claimed in Magdeburg that records of the Reactor Safety Commission (RSK) show that even the dump's operators, the Federal Radiation Protection Agency (BfS), have serious misgivings about allowing operation to resume at Morsleben, so far Germany's only terminal nuclear waste dump. Following a temporary shutdown by court order, the dump was reopened last June, though no new waste has been added.

Greenpeace has discovered that the underground dump near the border with Lower Saxony, which was commissioned during the GDR period, comes nowhere near meeting safety requirements. For example, it claims that water seeps into the pits, jeopardizing their stability. The records leaked to Greenpeace show that even the Reactor Safety Commission does not consider that the dump can be totally sealed using the technology currently available, and that an expert appointed by the Federal Radiation Protection Agency in Salzgitter submitted his scientific reservations back in April 1991.

"The entire Morsleben region is threatened by creeping radioactive contamination," said Greenpeace expert Inge Lindemann. There was a danger that water seepage and solutions from the overlying rock could cause the pit to collapse or be flooded. Though long-term safety was not possible, Lindemann stated, terminal storage had nevertheless been approved. Replying to a German Press Agency question, BfS spokesman Eckart Biehl rejected these accusations. He stated that five drip and alkaline seepage points at the dump had been known for some time, and that there were geotechnical plans to cope with them. A BfS expert who had undertaken a geochemical evaluation of the seepage had found no long-term safety problems at the dump.

### Sodium-Sulfur Battery Recycling Plant Almost Completed

93M1038 Munich SUEDDEUTSCHE ZEITUNG  
in German 11 Feb 93 p 28

[Excerpt] [Passage omitted] In developing their sodium sulfur (NaS) battery, which provides efficient power storage for such applications as electric vehicles, buses, or storage power stations, specialists at a Heidelberg firm gave early thought to waste prevention. The engineers were aiming for a recycling strategy whereby the maximum possible proportion of raw materials used would be reused or reprocessed, thus avoiding industrial waste or other emissions. The process also needed to be suitable for mass production.

A pilot plant was commissioned in 1990, with support from the Federal Ministry of Research and Technology [BMFT], providing initial practical experience and confirming the concept's viability. Construction of the resulting full-scale production facility, designed for an annual output of half a million NaS cells, is now nearing completion at the firm's Heidelberg factory, where there is a recycling plant capable of handling the returned exhausted batteries expected during the initial years of mass production.

NaS batteries have up to 480 cells interconnected to form a battery set with a capacity of up to 38 kWh. The key component of the rod-shaped cell is a solid ceramic electrolyte shaped like a test tube, filled with metallic sodium as the anode and surrounded by a sulfur shell, which acts as the cathode. It is electrically connected to the aluminum cell casing by a nonwoven graphite fabric. The recycling principle consists basically in the mechanical separation of the various individual components and their environment-friendly reprocessing. One third by weight of the NaS battery is made of components that can either be directly reused or readily reprocessed. These include the stainless steel casing, the heat insulation, the ceramic sealing compound containing the individual NaS cells, the connecting cables, and so on. The cells themselves present greater problems. Sodium and the sodium polysulfide produced during battery operation are environmentally hazardous substances. Special care is required with sodium, which is inflammable when exposed to air.

### Alternatives Available

There are various alternatives for processing the remaining components: the sodium polysulfides, mixed with sulfur, can be extracted and recycled as a dilute solution for dyes. Ceramic fragments can be used as raw material for the refractory materials industry, or may be dumped. One alternative is to reuse the pulverized electrode and electrolyte components directly in a patented process that extracts raw materials "thermally" for the chemicals industry. If the process is exploited to the full, a recycling quota of up to 97 percent can be achieved. A cost element of 5 percent of the end price is the goal for future production. ABB has protected its know-how with two patents. The firm's plans also include automation of the remaining manual stages of the process. The battery would then be heated *en bloc*, and the cells would be mechanically opened and emptied, the residue being reprocessed according to the principle set out above.

### Series of Waste Water Accidents at Hoechst AG Continues

93M103113893 Frankfurt/Main FRANKFURTER RUNDSCHAU in German 8 Mar 93 p 1

[hhk report: "New Accidents at Hoechst AG"]

[Text] Frankfurt/Main, 7 March—The series of accidents in the factories of the Frankfurt Hoechst concern continued on the weekend [6-7 March]. After oily waste water had flowed into the Main from the drains of the Hoechst AG on Friday, on Saturday there was a fire in a production building of the Cassella subsidiary in Fechenheim.

On Sunday a cloud of dye leaked from a defective filling plant and descended on cars parked in Frankfurt-Hoechst; according to the authorities, the dye is soluble in water and not poisonous. Nevertheless, Hesse Environment Minister Joschka Fischer had the plant closed until further notice. The repair work following the serious accident of 22 February, when several tonnes of aggressive chemical substances leaked and contaminated two Frankfurt districts, was declared concluded on the weekend.

At the same time, Hoechst AG denied a prereleased article in the Hamburg magazine DER SPIEGEL claiming that "alcoholic day-laborers" are employed in Hoechst factories also in "technical risk areas." In its latest edition, the magazine refers to the statement by a former day-laborer, who says that temporary staff ignore bans on drinking and smoking, as well as regulations for accident prevention.

## SWEDEN

### Study Recommends Sources Pay For Hazardous Waste

93WN0277C Stockholm DAGENS NYHETER  
in Swedish 19 Jan 93 p 8

[Article by Gosta Karlsson: "Producer Responsible for Waste"]

[Text] *Waste treatment based on free competition and producer responsibility for spent products will provide safer handling of hazardous waste.*

So says the one-man Committee on Hazardous Waste, which submitted its final report to the government on Monday [18 January]. The author of the study, Rune Olsson, former head of the Building Research Council, believes that competition and a variety of operators in the system for the transportation, storage, and final disposition of hazardous waste will give society a better grasp on where all the hazardous waste goes.

Rune Olsson is recommending first of all that the concept of hazardous waste be defined in such a way as to include so-called residual products that are dangerous to the environment. Among other things, this means that the one producing the waste—a firm, for example—would not be able to decide on its own whether or not its waste is hazardous.

Second, he is recommending that the current law on chemicals be supplemented to make it completely clear where the responsibility for a hazardous waste product

lies. "Responsibility will lie with the one whose activity results in production of the waste or with the one in possession of the waste at a later stage."

And third, Rune Olsson is recommending that municipal responsibility for the transportation of hazardous waste be abolished. According to Olsson, this has led to a monopoly that has hampered "flexible waste disposal." Olsson wants to see free competition and a variety of operators involved in the industry.

An existing Riksdag decision that the municipalities must take responsibility not only for transportation but also for the final disposition of hazardous waste should be canceled, says Olsson.

The report recommends a system of strict rules governing hazardous waste "from cradle to grave," so to speak. In the future, anyone involved in the transportation, interim storage, treatment, and final disposition of toxic waste would have to have a license for his activity in accordance with the ordinance on hazardous waste.

Licenses would be issued by the Environment Protection Board and the county administrative boards. The cost to the licensing authority of processing licenses would be covered by fees paid by the firms applying for such licenses. In general, the licenses would be valid for five years. The report was unable to say how large the fees should be.

### Government, Industry Electrical Vehicle Efforts Detailed

93WN0277B Stockholm DAGENS NYHETER  
in Swedish 20 Jan 93 p 12

[Article containing interview with Anders Lewald of the Economic and Technical Development Board and Uno Engman, electrical vehicle project chairman, by Ola Sigvardson; place and date not given: "1,000 Electrical Vehicles on the Street"]

[Text] *One thousand electrical vehicles on Swedish streets in one sweep—that is the goal in a unique joint effort by the Industrial and Technical Development Office (Nutek), Swedish firms, and municipalities. The first vehicles will be operating within a couple of years. Maybe.*

"We hope that this initiative will speed development," says Anders Lewald of Nutek. "It is true that about 100 electrical vehicles are operating in the French city of La Rochelle and that a similar project is underway in Ruegen, Germany. But we want to go at it on a considerably bigger scale."

A Riksdag decision a few years ago gave Nutek the job of encouraging the use of energy-efficient technology. Vehicles quickly emerged and took center stage, and electrical vehicles were pointed to as the most worthwhile alternative. To get things moving, Nutek turned last year to a number of firms it thought might be interested in using such vehicles.

### Many Interested

Nearly 40 firms and government bodies expressed an interest in purchasing electrical vehicles. Eventually there crystallized a group of nine, among them Bilspedition, the Post Office, the City of Stockholm, and the municipalities of Malmo and Goteborg.

Last fall those firms and municipalities got together and worked out a detailed description of what an electrical vehicle must be able to do to meet their needs. Two types of vehicle were outlined:

- First, a private automobile of the station wagon type capable of carrying either people or light loads. It must be able to carry 350 kg (including driver and passengers), have a range of 60 miles, be capable of doing 100 km per hour, and accelerate to 50 km per hour in 10 seconds.
- Second, a delivery van that can carry 1,200 kg and otherwise have about the same performance characteristics as the private automobile.

### Stiff Requirements

[Lewald] Those are stiff requirements. As far as I know, there are no electrical vehicles for sale today that can meet those requirements.

[Sigvardson] Who will get the chance to manufacture the vehicles?

[Lewald] We will make inquiries with any firm that we think might be interested, even internationally.

[Sigvardson] Is this something for the small companies all over Sweden that manufacture their own electrical vehicles one at a time?

[Lewald] No, this will be a big order placing heavy requirements on the manufacturer regarding both manufacturing capability and the development of new technologies. It will involve the established automobile industry, but also other heavy industry that might be expected to invest in electrical vehicles.

### Delivery in 1995

After this summer is over, the Swedish group intends to send letters to suitable firms the world over. The first test vehicles are to be ready for delivery at the start of 1995.

[Sigvardson] How many vehicles will you order?

[Lewald] We estimate that there will have to be perhaps 500 of each type in order to attract serious manufacturers. That makes a total of close to 1,000 electrical vehicles.

[Sigvardson] How much money does it mean for the company that gets the order?

[Lewald] Estimating on the low side, an electrical vehicle will cost 200,000 kronor. So 1,000 electrical vehicles will mean 200 million kronor.

[Sigvardson] Is this really a realistic project?

[Lewald] There are a lot of if and buts. For example, a traditional lead battery will probably not do. Our specifications assume that there will be mass production of, for example, nickel-cadmium batteries. Another assumption is that there will be a market for electrical vehicles in other parts of the world so that the manufacturer can have a longer production run. California is the first place that comes to mind.

So this is certainly a balancing act.

*The chairman of the group behind the project is Uno Engman from the City of Stockholm.*

[Engman] For the past couple of years we have been operating about 10 electrically driven Volkswagen Golfs. The results have been mixed. The vehicles operate well in traffic, but their range is a quite crucial problem that has not been solved. We will require a range of 60 miles, and that means setting a high hurdle for the vehicle manufacturer to clear. But that level is completely necessary if the vehicles are to be of interest to us on a large scale.

[Sigvardson] How many vehicles would the City of Stockholm be able to use?

[Engman] We have about 1,500 motor vehicles today. From 300 to 500 of them could run on electricity just as well as they could with an internal combustion engine.

[Sigvardson] Do you think you will buy that many?

[Engman] It depends. On whether there is a manufacturer able to meet our requirements. On whether Stockholm's politicians decide that that is the right way to go. And on whether electrical vehicles are not too expensive.

Cost is a major issue. Electrical vehicles will be more expensive than those running on gasoline or diesel fuel. If the state feels that a switch to electricity is desirable, it will have to provide financial support. The 10 percent of the purchase price that Nutek may be able to help us with will not be enough.

### Stockholm Authorities Plan Anti-Mercury Campaign

93WN0278D Stockholm DAGENS NYHETER  
in Swedish 23 Jan 93 p D 3

[Article by Gunnar Sorbring: "Tougher Demands To Protect Environment From Mercury Discharge"]

[Text] Hundreds of kilograms of mercury are used each year in various products in the City of Stockholm in spite of all the campaigns to get us to stop using this highly toxic and dangerous metal.

Therefore the environmental authorities will try to eliminate mercury from Stockholm once and for all and encourage the use of other, harmless materials that are just as effective.

In a series of campaigns the environmental administration will make strict demands on drugstores, hobby and toy stores, schools, hospitals, dentists, nursing homes and social service centers as well as industries and municipal and state institutions.

The goal is to reduce the discharge of additional mercury into the environment and clean up "past sins."

#### No Longer Needed

Mercury that is discharged into the environment is highly toxic to all forms of life from microorganisms to human beings and can damage the central nervous system.

Fetuses that are exposed to mercury can suffer defects that retard their mental development and motor ability.

"Mercury puts a heavy strain on the environment and we should stop using it altogether. In many areas it is no longer needed and if demands are made technology always finds new materials that can replace it," said environmental protection inspector Lena Drejare of the environmental administration.

The administration has already started making demands in the field of dentistry. It is estimated that the largest amount of mercury found in the water—a good 55 percent—comes from dental clinics and dental filling suppliers. And 50 percent of the amalgam that dentists use consists of mercury.

Clinical thermometers are another of the most common mercury products. Last April 190,000 thermometers were collected in Stockholm County and this step alone eliminated 380 kilograms of mercury.

But considering that 80 percent of the households in Stockholm continue to own this kind of thermometer, people still have 560 kilograms of mercury in their homes.

A lot of mercury is also stored in schools. In a high school that the environmental authorities and the Stockholm Waterworks examined in December the drain trap in the physical engineering room was full of metallic mercury. Mercury was also found in drain traps in the physics and chemistry classrooms.

#### Crematorium Offenders

Stockholm's two crematoriums, Racksta and Skogskyrkogården, are also offenders. Around 50 kilograms of mercury come from there each year—almost exclusively from amalgam fillings in the mouths of the deceased.

The crematoriums are already working to reduce the discharge. When special amalgam screening devices are installed it is estimated that the annual discharge will be cut to five kg.

The environmental administration now hopes to obtain the approval of the Environment and Public Health

Board for coming to grips with mercury. In 1991 the city's three sewage treatment plants collected no less than 64 kg of mercury.

#### Lakes, Archipelago Ailing

The lakes and archipelago areas in Stockholm County are hard hit by mercury pollution.

In Brunnsviken and Trekanten the bottom has such a high mercury content that biological damage to microorganisms is very likely. This was shown in a study conducted by the Stockholm Waterworks.

The mercury rises through the food chain from the microorganisms via water organisms to fish and finally to the people who eat the fish.

The lakes in the City of Stockholm are still doing fairly well, despite the high level. That is because they are rich in nutrients and therefore more resistant to environmental toxins.

In many of Stockholm's satellite communities the situation is the opposite. Mercury is not diluted in the same way in nutrient-deficient and acidified bodies of water.

Mercury is a big problem in the Stockholm archipelago. This is shown by samples taken by the National Food Board of burbot near Vaxholm and perch in Askrikefjärden and Stora Värtan, among other locations.

Since the 1970's the Food Board has blacklisted areas where the mercury content in fish is too high. Last year it began offering general guidelines on fish consumption instead. For example, pregnant women are advised not to eat freshwater fish.

However people at the environmental administration in Stockholm hope the blacklisting system will be reinstated because it is more reliable and people do not have to depend on information supplied by fish markets.

#### Hunting With Lead Shot To Be Banned in Wetlands

93WN0278B Stockholm DAGENS NYHETER  
in Swedish 31 Jan 93 p 6

[Article by Gosta Karlsson: "Ban on Lead Shot in Wetlands"]

[Text] After 1 July 1994 there will be a ban on hunting with lead shot in the 30 Swedish wetland areas that contain the most birds. The elimination of the poisonous ammunition on a voluntary basis is going too slowly, in the view of the Environmental Protection Agency.

Millions of seabirds die each year of lead poisoning in Europe and North America. The birds must ingest gravel in order to digest their food and cannot distinguish between bits of gravel and bird shot. The action of the gastric juices turns the lead shot into a deadly poison that goes into the bloodstream.

The symptoms of lead poisoning are that the birds are listless, stop eating, become withdrawn, and die. Swallowing a few pieces of shot is enough to produce this effect.

It is estimated that around 3 percent of North American wetland fowl die of lead shot poisoning annually. This amounts to between 1.6 and 3.8 million deaths each year among U.S. ducks and geese alone.

Around 20 countries have begun treating hunting with lead shot as an environmental problem. Work is under way in several places to legislate a transition from using lead to primarily iron in shot cartridges. In Europe the Danes have come the farthest. They have had a ban on hunting with lead shot in certain wetland areas for a number of years and after 1 April 1993 all wetlands hunting and clay pigeon shooting at ranges will be covered by the ban. In another three years Denmark will also ban lead shot in woodland hunting.

#### Poor Results

In Sweden the Riksdag decided in 1991 that within 10 years—a shorter, but unspecified time for hunting in wetland areas—hunting and sports shooting should change over from lead to more environmentally suitable shot. In principle the transition would occur voluntarily.

The Swedish Sportsmen's Association has suggested phasing out lead shot to its members, but in spite of this the environmental authorities have not seen any appreciable results.

Therefore the Environmental Protection Agency, which can decide on matters pertaining to hunting without consulting the government, is planning to impose a ban on hunting with lead shot in Swedish wetlands that contain the most birds and are the most valuable hunting areas. The ban will take the form of a supplement to the Hunting Ordinance and will go into effect on 1 July 1994.

#### Thirty Areas

The ban will cover 30 wetlands around the country, with a total area of 383,000 hectares or 3,830 square kilometers. These wetland areas include Krankesjon in Skane, Store Mosse in Smaland, Hornborgasjon in Vastergotland, Takern in Ostergotland, Gallstaviken in Uppland, Persofjarden near Lulea, and the Sjaunjas marshes in Norrbotten.

#### Environment Studies Using Kiruna Space Center Satellites Urged

93WN0278E Stockholm DAGENS NYHETER  
in Swedish 31 Jan 93 p 6

[Article by DAGENS NYHETER's Norrland correspondent Caj Noren: "Environmental Studies by Satellite Proposed in North"]

[Text] Lulea—Kiruna is strengthening its position as northern Europe's space center. Now a report issued by the Environmental Protection Agency, the Space Agency, and the county administration, among others, proposes that Kiruna's space expertise be utilized in an environmental data center for satellite information.

"The environmental field is so incredibly exciting and important today that we must count on an increasing need for this type of information," said one of the people who prepared the report, department director Staffan Borg of the Norrbotten County administration.

All of the 40-odd organizations, 15 of them outside Sweden, that were contacted by the authors of the report were very interested in environmental data from satellite images. One of the goals is to sign long-term contracts with the EC and ESA, the European Space Agency.

The report proposes that cataloging the natural environment and natural resources with satellite images be a major area for the environmental data center.

#### Physical Influences

As satellites produce their images 24 hours a day, year after year, the environmental data center can also study physical and chemical influences on the environment. This applies to the Baltic Sea and the Arctic region of the Nordic countries and the Kola peninsula, for example, where industries and the Kola nuclear plants constitute an increasingly serious threat to the environment.

"There is much to indicate that satellite-based environmental monitoring could develop into a Swedish specialty in international cooperative efforts," the report states.

The new center can also monitor large land and water areas, sound an early alarm in the event of major air and water pollution, and provide information about where it is spreading.

"The environmental data center could also multiprogram satellite data with other available information, for example from the Land Survey data base, if one wanted to supplement the images with precise boundaries," said department director Borg.

#### Cooperation

It is proposed that the Swedish Space Agency lead the project. In addition to the Land Survey Board the environmental data center will cooperate with the Environmental Protection Agency, the Space Agency, the Norrbotten County administration, the Abisko scientific station, and the town of Kiruna.

The report proposes that the center have 20 staff members initially. The state would invest 50 million kronor in the development stage. After this the center would operate on a budget of 20-30 million kronor, half of which would come from foreign clients.

The authors of the report note that Kiruna has a greater capacity and more experience with satellite images—so-called remote sensing analysis—than perhaps any other place in Europe.

### Scholar Sees Environment Gains From EC Tie

93WN0277A Stockholm DAGENS NYHETER  
in Swedish 5 Feb 93 p 4

[Guest commentary by Associate Prof. Said Mahmoudi, expert on international law: "EC a Blessing for Environment"]

[Text] *Opponents of the EC have the idea that as an EC country, Sweden will not be able to maintain its strict environmental standards. The biggest drawback, as they see it, is that the EC is only an economic coordinating agency and that the economy will always be given the highest priority. Such a view is due to narrow-mindedness and provincialism and reflects a lack of knowledge concerning the EC. So says Associate Professor Said Mahmoudi, who also feels that politicians often give faulty and simplistic interpretations of decisions by the EC Court of Justice.*

Opposition to Sweden's membership in the EC, both when it was unorganized and now that it has taken on more solid form as the organization, "No to the EC," has been based on a number of predictions. The purpose of those predictions is to convince the public at all costs that from Sweden's standpoint, joining the EC will have more drawbacks than advantages. Sweden's environment is presented as the biggest victim.

Although there is no unanimity concerning the extent of the negative effects that membership in the EC will have on Swedish environmental efforts, it is the united opinion of EC opponents that as an EC country, Sweden will have no possibility of maintaining its strict environmental standards. The EC opponents' strategy for spreading that opinion consists of two separate but complementary approaches.

First, they depict the EC as an antiecological organization. And second, they compare current Swedish environmental rules with the corresponding EC regulations to create a threatening picture of deterioration in areas where Swedish laws are stricter than those of the EC.

As a supranational organization with supranational powers in a number of predetermined areas—including the environment—the EC is accused by its opponents of being incompetent. The reason is that legislation on certain matters requires unanimity among all the member states. Other drawbacks mentioned are indifference and bureaucracy.

But the biggest drawback, according to opponents, is that the EC is first and foremost an economic coordinating agency. They say that the economy will always be given priority over all other interests—including protection of

the environment. Limited coverage by EC rules is mentioned by opponents as an example of the Community's halfhearted commitment to the environment.

Such a description of the EC is due to narrow-mindedness and provincialism. It also reflects a lack of knowledge concerning the EC and its possibilities and philosophy.

Some of our worst environmental problems are those originating in other countries, including EC countries. No strict Swedish legal measure is enough by itself to solve the problems of acidification. Long-range transboundary air pollution cannot be combated with rigid national laws. International cooperation is a necessity. International agreements are the formula proposed by the EC's opponents.

Agreements between states, examples being the 1985 ozone convention and the 1979 convention on long-range air pollution, are very important for successful environmental protection efforts at the international level, but they are not enough. Their survival depends largely on the will and voluntary cooperation of the parties involved. This is where the EC fulfills an essential function. Unlike ordinary international organizations and like sovereign states, the EC possesses legislative, executive, and judicial authority over its member states. The Community can make laws against the will of one or more EC countries.

The result, at least as far as the environment is concerned, is that environmental rules in Ireland, Portugal, and Spain today consist almost entirely of EC regulations. Without the EC, it is possible that those countries would not have accomplished half of what they have so far. Even "incorrigible environmental offenders" such as Great Britain and Italy have been forced, under increased pressure from the EC, to gradually tighten their rules. Nor must we forget the EC's role in improving the environmental situation in the North Sea. If one keeps that in mind and at the same time thinks of Sweden not just as a country in Northern Europe but as a part of all Europe, one will realize that the EC is actually a blessing for Europe's environment and not—as its opponents claim—an obstacle to it.

To convince the Swedish people of how bad the EC really is for environmental protection in Sweden, the opponents compare, as we said, current Swedish environmental rules with the EC equivalent and emphasize the areas where Sweden's regulations are stricter. They also refer to summaries of decisions by the EC Court of Justice or of the EC Commission's pronouncements and practice to present a threatening picture of a deteriorating environment after Sweden joins the EC.

The question of whether Swedish membership in the EC will affect environmental protection efforts in Sweden is a legal problem that is complicated in the extreme. But

discussions on that subject in Sweden have been conducted mainly by politicians, and the Environment Party has played a prominent role in that *political* debate.

When politicians concern themselves with legal analyses for the purpose of achieving a political purpose, faulty and simplistic interpretations of decisions by the EC Court of Justice are usually the result. It is also a universal practice to pick one phrase or one sentence out of a court decision or an EC document and then draw far-reaching conclusions from it. The result has been a bunch of half-truths that are impressive but at the same time mislead the uninformed individual.

For example, it is not entirely correct to claim that the Cassis de Dijon principle means that a banned product can be imported as long as it is allowed in another EC country. The truth is that what the principle means primarily is that proportionality and nondiscrimination are two criteria that must be taken into account when a member state wants to adopt environmental measures that might restrict trade (proportionality—the measure must not be stricter than is necessary for achieving the stated purpose; nondiscrimination—the measure must not have the effect of discriminating against foreign products in favor of domestic products).

It was partly because of the Cassis de Dijon case that national measures to protect the environment were later recognized as exceptions to the EC's ban on trade-restricting measures. What the EC Court of Justice decided in the "Bottle case" was, among other things, that banning imports was permissible as long as it was not discriminatory—in other words, as long as it applied equally to domestic and foreign producers and products.

It is also misleading to claim that the Vallonien case will open Sweden's borders to imports of dangerous waste from the EC countries when Sweden becomes a member. The basic principle has always been that a general ban on imports of certain goods from other member countries cannot be adopted without further ado, and this was emphasized once again in the Vallonien case.

On the other hand, there is nothing in the court's ruling to prevent a member state from dealing with each individual case separately and reaching a decision based on its own priorities.

The comparisons that the EC's opponents make between Swedish environmental rules and the corresponding EC regulations are interesting but hardly of any lasting value. It is not important, for example, that the ceiling on carbon dioxide emissions is currently lower in Sweden than in the EC. It is also unimportant that the EC currently has more radical rules against noise. Considering the ever-increasing pace of changes in EC legislation, such comparisons are meaningless.

What is important, however, is to seek answers to these questions: Under what conditions can Sweden as a

member state be forced to relax its environmental standards? What possibilities exist for Sweden's adopting stricter environmental measures once we belong to the EC?

Answering those questions requires a thorough and comprehensive analysis of the relevant rules in the Treaty of Rome and the case law of the EC Court of Justice. Without going too far into the legal arguments here, it can be noted that the answers to the questions we have asked depend on the legal basis for the environmental directives, which in turn is determined by the chief purpose and content of those directives.

When it comes to "pure" environmental directives—that is, those concerned completely with protection of the environment and not affecting the market mechanism directly—the member states always retain the right to introduce stricter rules than the EC. Instructions concerning the protection of animals and plants are examples of such rules.

Instituting the Community's internal market during 1993 has been the EC's main objective and concern ever since 1986, when the so-called Single European Act was adopted. It was considered fundamentally inconsistent with that purpose to continue allowing member states to deviate from the EC's goods-related legislation.

A goods-related environmental directive that is adopted *unanimously* therefore does not allow any deviation whatsoever from the EC rule. If such a directive is adopted by a statutory majority, the states that have voted against it can continue with their stricter rules.

As a member of the EC, Sweden can always vote against a draft directive that might cause a relaxation of Swedish environmental standards. If the directive is then adopted by a statutory majority, Sweden will be able to keep its stricter rules. If Sweden chooses to join all the other EC countries in voting for such a directive, any relaxation of standards will be the result of its own decision, not that of the EC.

There seems to be only one situation in which the EC can *require* a relaxation of Swedish environmental standards. It concerns all goods-related environmental directives adopted unanimously between 1987 and the time when Sweden joins the EC. In that case, the Community can require a relaxation of Swedish standards if the requirements in the EC directive are lower. A requirement of that type can be brought up to date only through negotiations preceding membership.

But even if there are stricter Swedish rules when the negotiations begin and Sweden agrees to harmonize its laws with the EC directives, this must be regarded as a minor concession in exchange for being part of the group and influencing the environmental situation in the rest of Europe.

It is important to emphasize that environment-conscious countries such as the Netherlands and Denmark—whose

standards are as high as Sweden's and in some cases higher—have succeeded so far in having the last word against the EC when it comes to protecting their own environment. There is no reason to think that Sweden, as a member of the EC, would not be able to maintain its high environmental standards.

### Environment Agency Urges Leaded Gasoline Ban

93WN0278C Stockholm DAGENS NYHETER  
in Swedish 6 Feb 93 p 21

[Article by Ola Sigvardsson: "Leaded Gasoline Out by 1995"]

[Text] *Leaded gasoline will be banned. The Environmental Protection Agency brought up this demand in a new report on environmental classification of gasoline. However there is nothing in the report about Environmental Affairs Minister Olof Johansson's promised emphasis on methanol.*

After 1 July 1994 it will be illegal to manufacture leaded gasoline in Sweden or import it to this country. Half a year later a ban on selling it will go into effect.

The lead ban is the major item in the Environmental Protection Agency's report on the gasoline of the future. The agency noted frankly that as one company—OK—can now offer unleaded gasoline with the same properties as the leaded variety, the technical problems have been solved.

Today 700,000 cars, 20 percent of our 3.6 million passenger cars, require leaded gasoline. The engine valves need lubrication. In practice over a million cars drive on lead—to be on the "safe side."

OK has replaced the lead in its gasoline with sodium. Both Shell and Statoil are close to adopting similar solutions.

"Getting rid of lead in accordance with this timetable will not give us any problems," said Johan Lind, Statoil's information director.

If lead is banned it will eliminate the emission of 330 tons a year.

But the lead ban is just the first step in a radical change in our gasoline. The next step is to introduce environmental classification.

#### Four Classes

"The greater the emission produced by a grade of gasoline the more it should cost to sell and use," said Jan Karlsson of the Environmental Protection Agency. The point of environmental classification is to use taxes to encourage the oil industry to supply less environmentally harmful products.

There are four classes in the proposal that is now on the environmental minister's desk:

- Class 4 is the dirtiest. It is not allowed in Sweden today but will be as a result of a common European gasoline standard. It will receive no tax breaks at all.
- Class 3 corresponds to today's lead-free 95 octane. It will be taxed at four ore less per liter than class 4.
- Class 2 is the most interesting. To qualify for this rating the gasoline company must reduce the sulfur content by 90 percent, cut the benzene content almost in half, and radically cut down on the percentage of aromatics. In return the tax will be reduced by 10 ore (plus value-added tax) on gasoline for cars with catalytic converters and 12 ore on gasoline for older cars.

At the same time this gasoline costs four to six ore more to produce than today's lead-free 95. But in principle it will be at least a few ore cheaper for the companies to sell. The question is whether it will be cheaper for car owners.

"That is uncertain," Karlsson said.

"The environmental classification system is not intended to encourage individual car owners to choose cleaner gasoline. Not enough money is involved. But even a few ore per liter adds up to very large sums for gasoline companies. Thus the aim is to induce them to deliver better gasoline to their gas stations for the sake of economic gain."

The Environmental Protection Agency hopes that most of us will use class 2 gasoline in the future. In just two or three years almost 100 percent of the gasoline will be in this class.

Will the oil companies be able to handle the rapid changeover?

"Yes, but it will be tough," said Mart Maandi, information director for OK Petroleum. "It will require big investments in both refineries and the distribution system."

Environmental class 1 is described only vaguely in the report. It is a gasoline that does not yet exist and the oil companies must remove an even larger amount of harmful substances to qualify for this classification.

There is a slight problem in connection with the tax break figures:

The proposal is supposed to be tax-neutral, in other words not cost the state anything. Therefore the Environmental Protection Agency is proposing a general tax increase of seven ore on all types of gasoline in 1994 and another two ore in 1995. Then the respective rebates will be deducted for classes 2 and 3.

The entire report is about what will happen to our traditional gasoline, produced from fossil petroleum. In an interview in DAGENS NYHETER's consumer section (26 January 1993) Environmental Affairs Minister Johansson pointed to environmental classification as the

instrument that will pave the way for the introduction of renewable domestic fuels: methanol and ethanol, produced from wood or grain.

He missed the mark there.

The Environmental Protection Agency noted succinctly:

"Such a program cannot be carried out by a single country of Sweden's size acting on its own and therefore it should be viewed as part of a further international effort."

An elegant way of saying that it will take an extremely long time.

DAGENS NYHETER tried in vain to reach Johansson for his comment.

#### **Losing Unique Opportunity**

"Unfortunate, very unfortunate. That is my spontaneous reaction."

That is what Bjorn Gillberg said in a comment on the Environmental Protection Agency's report on environmental classification of gasoline. He has become known as a strong advocate of a Swedish emphasis on wood-based methanol as an automobile fuel. Something that is conspicuously absent from the report.

"This means Sweden will lose a unique opportunity to pave the way for renewable automobile fuel. Simply making minor changes in the composition of gasoline will have only marginal significance for the environment."

#### **Slight Leak Stops Ringhals Nuclear Power Reactor**

*LD0303183293 Stockholm Sveriges Radio Network  
in Swedish 1645 GMT 3 Mar 93*

[Text] The Ringhals 1 nuclear power reactor has again been stopped because of technical problems. Over the weekend the reactor was repaired and when it was restarted small amounts of radioactive steam started to leak in a loose vent. According to the Ringhals management, the leakage does not have any connection with the earlier extensive technical problems with the reactor.

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